The MERRIMACK ARCHAEOLOGICAL SURVEY

A PRELIMINARY PAPER

by

WARREN KING MOOREHEAD

With Supplementary Notes by BENJAMIN L. SMITH
on the Concord Valley

PEABODY MUSEUM
SALEM, MASSACHUSETTS

1931

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Fig. 1 Salmon pool on the Pemigewasset, near Ashland, N. H. 500 years ago.
From a painting by Abbott Cheever

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PREFACE

The author of this preliminary report desires to express his appreciation and gratitude to the individuals and institutions who rendered our survey financial support. There were fifty-nine persons who contributed, quite a number of whom were interested in the Children's Museum of Jamaica Plain, Mass. To the following institutions the writer is especially indebted: Peabody Museum, Salem; Smithsonian Institution, Washington, D. C.; Trustees of Phillips Academy, Andover; Society for the Preservation of New England Antiquities, Boston; New Hampshire Historical Society, Concord, N. H.; A Friend.

To the 400 land owners who permitted excavations and studies we desire to extend very cordial thanks. Several should be especially mentioned. The Boston & Maine Railroad consented to test pits along their right of way in New Hampshire, and especially at The Weirs. The mayors and officials of the following towns allowed excavations in public parks—Laconia, Manchester, The Weirs, Wolfeboro, Melvin Village, Franklin, Bristol, Newburyport, Lowell.

In certain cities or towns, fine residences, flower gardens, or lawns occupied knolls, or slopes, once inhabitated by Indians. With but one exception, these estate owners permitted us to dig. At Manchester, Mrs. Frederick Smyth owns a large estate on high ground overlooking Amoskeag Falls. She granted permission for a rather thorough exploration. In such cases we were very careful to use sod cutters, placing the sod upon one canvas and the earth on another. Restoration was meticulously accomplished. Space does not permit us to individually thank all the ladies and gentlemen who aided the expedition in many ways. There are, however, not a few who should be especially mentioned. At Newburyport, we are indebted to Messrs. Wallace B. Ordway, John Cole, George Martin, Rev. Glenn Tilley Morse, and Frank S. Osgood. His collection is referred to on page 16. At Groveland Mr. Renton Dewhirst; and at Haverhill, Mr. F. A. Luce, Mr. C. W. Arnold, and Mr. Charles D. Porter. At Lowell Mr. Fred A. Rolfe visited camp several times, gave us much information, and Mr. Alfred Sawyer aided us. At Concord, Mass., both Mr. Benjamin Smith and the survey are indebted to the following persons: Judge Prescott Keyes, Mr. Lawrence Clark, Mr. George Root, Mrs. Mary W. Cook, Mr. Mason Garfield, Mr. and Mrs. Herbert B. Hosmer, Mr. Charles Davis, Mr. George Prescott, Mrs. Edward L. Parker, Mr. William Foss, Mr. Lennox Lindsay, Mr. Fred Eaton, Mr. W. A. Davis, Mr. Herbert W. Hosmer. Mr. and Mrs. Benjamin Smith, of Concord, took great interest in the survey and frequently visited camp. We did not remain long in the Concord Valley where

Mr. Smith explored extensively and kindly offered to write a brief preliminary paper for us. He is specializing in the study of local archaeology, and we, therefore, left Sudbury and Concord valleys to be explored by him.

At Harvard, Mass., Miss Clara Endicott Sears permitted unlimited exploration upon her estate. All objects found along the Nashua River were placed in her Indian museum. The survey is greatly indebted to Miss Sears for her many kindnesses.

Those who assisted elsewhere were: Nashua, N. H., Mrs. Grove and Mr. Webster Martin; Manchester, N. H., Dr. Harry L. Watson, Mr. Wilfred E. Adams and Dr. W. H. Nichols. Dr. Watson was especially active in aiding our researches. Concord, N. H., Mr. Otis G. Hammond, Mr. J. Hamilton Lewis, and George Morrill, Jr.; Franklin, N. H., Mr. Richard W. Sulloway, Miss Mary Proctor, Mr. Warren Draper and Mr. James Aiken; North Billerica, Mass., Dr. A. W. Stearns, and Mr. Ainslee Walker; Melvin Village, N. H., Mr. Charles Davis and Mr. Thomas G. Plant; Wolfeboro, N. H., Rev. Orman Headley, Dr. Henry F. Libbey, and Messrs. Floyd Jackson, Meader, Paris, Carroll Piper, Levi Edwards, and Percy Kimball. At The Weirs, Mr. Fred Moore, proprietor of the hotel, cooperated and secured information of value. Mr. and Mrs. Williams allowed us to dig extensively. Captain Sidney Baker, and Pilot Charles Sanborn of the steamboat "Mount Washington" frequently transported the survey outfit and we are especially indebted to them. Mr. Hayes, manager of Governor Estates, the Varney Brothers and other persons granted permission for excavations. Mr. W. E. Floyd gave us his collection of forty or fifty stone objects.

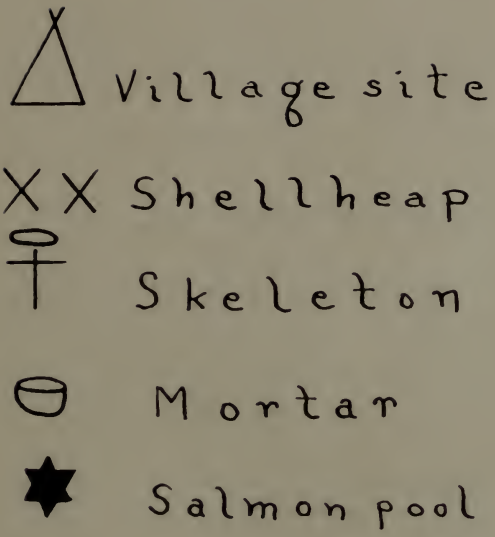
In Boston Mr. Charles H. Taylor, proprietor of the *Globe*, and Mr. William Sumner Appleton took great interest in our researches.

William C. Endicott, Esq., and Mr. L. W. Jenkins, of the Peabody Museum, Salem, have our hearty thanks for cooperation and support.

To the Trustees of Phillips Academy, who made generous appropriations we are especially indebted.

Andover, Mass., May 1, 1931

LEGEND



Upon all Maps, save Figure 2, these marks have been entered. Figure 2, being a copy (see page 10) we retained the original lettering. Our XX's upon this map indicate that Castle Neck was almost entirely covered by shell heaps.

The engineers, Messrs. Brown and LeBaron explained their letters as follows:

A. and C. Large shell-heaps.

B. Skeleton and large shell-heaps.

D. and E. Shells, ashes and numerous stone implements.

M. Mussel shell heap.

P. Bone and stone objects, ashes and shells.

R. Stone Ornaments.

S. Skeleton.

PRELIMINARY REPORT

on the

MERRIMACK VALLEY EXPEDITION

April 1st — September 15th, 1930

Sometime in the fall of 1929 it was decided to conduct an archaeological reconnoissance throughout the Merrimack Valley. Mr. Percy Hodges, Jr., a graduate student of Harvard University, was assigned the compilation and recording of Indian locations covering the historic period. Mr. Hodges devoted such time as could be spared from his scholastic duties to the completion of this task. His examination of various historical and Colonial works resulted in a list of some eighty or ninety Indian sites either along the Merrimack itself or upon tributaries. All this material was entered upon index cards, and is available for future study.

We began operations at Newburyport early in April, cooperating, as we proceeded up the river, with various societies, organizations, and individuals. Late in June we moved our entire outfit to Plymouth, N. H., and from that time until toward the middle of September, worked down stream.

Cards giving particulars of Indian sites mentioned in historical papers were assembled in order from Newburyport to Plymouth, and as the expedition moved from place to place, these records were consulted and an attempt was made to identify Indian towns through intensive field operations.

In a brief report it is impossible to outline in detail our many labors, but we desire to assure those, who through generous support made possible the expedition, that as soon as additional funds are secured, a more comprehensive and lengthy narrative, based upon our discoveries, will be published.

We should first state why we undertook an archaeological study of the Merrimack Valley. With the exception of the state of Maine,* we have available no extensive archaeological work, or investigation, east of the Hudson. There was made a preliminary survey of the Connecticut, and years ago a large shellheap at the mouth of the Housatonic was studied during some two or three weeks. Professor George H. Perkins for many years conducted researches, under the auspices of the University of Vermont, in the Lake Champlain sector. The late Professor Arlo Bates investigated

*Archaeology of Maine, 1922. Phillips Academy, Andover.

shellheaps along the Maine coast, but his important maps recording these are lost or mislaid. Mr. Charles C. Willoughby's observations upon the Red Paint People culture, and other important papers of his, should not be omitted. Notwithstanding these observations, Western and Southern areas have been more intensively studied, archaeologically, than our New England territory. The explanation is simple. The same amount of time and effort expended in other fields produces much larger collections.

The writer's statement to the effect that the Merrimack Survey presented some difficulties may seem strange to readers. Expeditions working in the South or the West are faced with less serious problems because most Indian sites are in fields, or woods, and seldom built upon. Usually they occur in thinly settled sections of our country. Surface indications enable us to concentrate and frequently tumuli form prominent Indian land marks. The reverse is true along Merrimack waters.

In our Merrimack basin the following large communities are all superimposed upon Indian villages of varying extent; Newburyport, Haverhill, Lawrence, Lowell, Concord (Mass.), Nashua, Manchester, Concord (N. H.), Franklin, and The Weirs. Located on smaller sites are villages such as Amesbury, Merrimac, Hooksett, Suncook, Laconia, etc. Our ancestors annihilated most tribes living west of central Maine in early Colonial times, and we of today have destroyed practically all traces of their primitive habitations and camps. The race which Metacom and Asacumbit had just cause to hate, tramps unceasingly over forgotten Indian paths.

The first duty of an expedition is to obtain permission from land owners for test pits and exploration. A crew is placed at work upon a given site not far from the river, and those in charge must then and ever afterward, during the entire and lengthy season, seek out one person after another. Frequently it becomes necessary to enlist the services of local historians. There are many persons of foreign extraction operating truck farms along the river between Newburyport and Franklin. For the most part, their lands are fertile and lie near water. Occasionally, these land owners, particularly the non-English speaking ones, do not understand the nature of our work and refuse permission for test pits. Long experience has taught us that instead of arguing with these people it is far better to approach them through their local priest,—in whom they have confidence. Lawrence, Lowell, Nashua, Manchester and Concord, N. H., were built at falls. In Indian times these were always prominent fishing stations, many Indians congregating, as is stated in our Colonial records. It is easy for us to visualize the evolution of such a site. First the Indians, then fur traders, presently a few white families, followed by a village, the erection of dams and construction of canals to obtain water power, and finally the hustling, modern city with its enlarged manufacturing plants.

From more than 400 property owners permission to examine lands was sought. But five refused—a very small percentage. We were permitted to

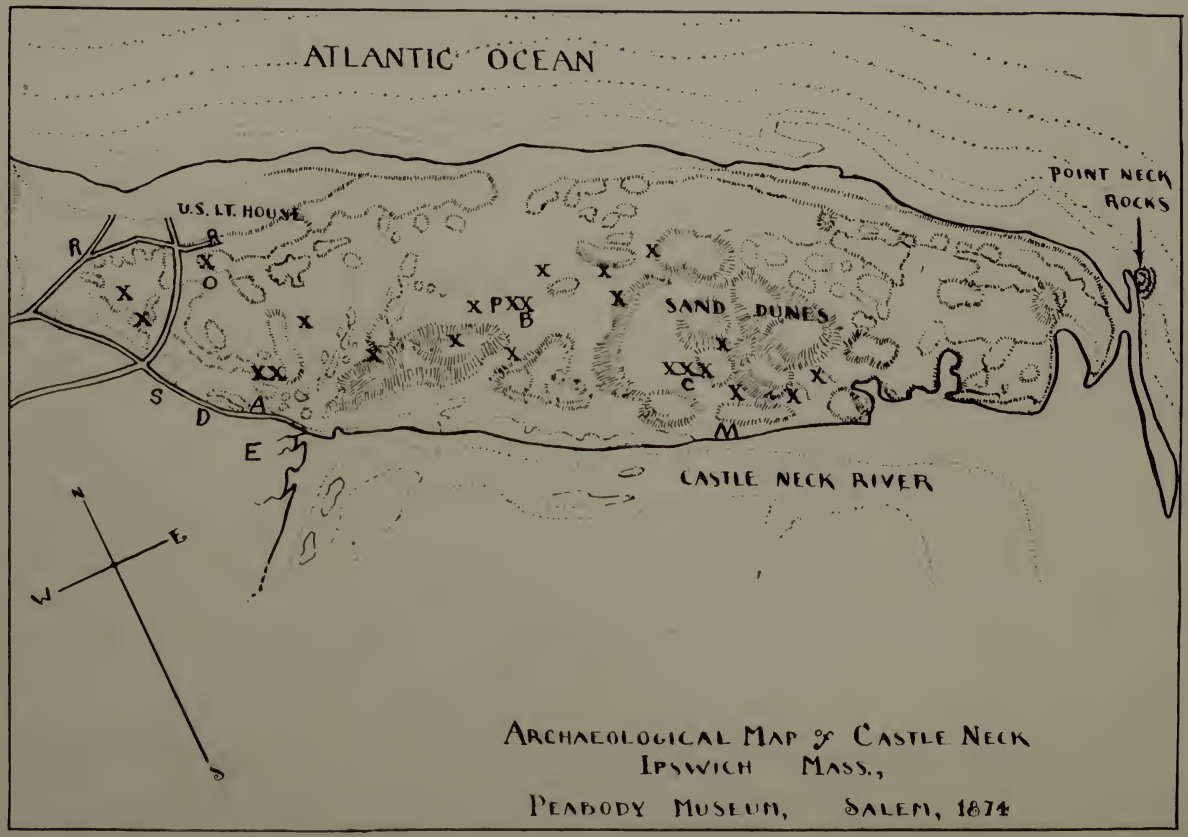


Fig. 2 That portion of Castle Neck occupied by Indians.

excavate in lawns, fields, thoroughfares, parks, flower beds, railway right-of-way and near white people's cemeteries.

Thoreau, the famous naturalist, lived and labored in Concord, Mass. His small Indian collection is preserved in the Peabody Museum, Harvard, and at Concord. It seems strange that any refusals to conduct research work should have occurred in Thoreau's town, yet we were denied inspection by two land owners. A lady, residing in the center of Lowell, gave permission but later withdrew consent. Those owners who declined owned Indian burial sites of the prehistoric period, and since we found no cemeteries and but few skeletons during our entire trip, these refusals were more than unfortunate, they hampered scientific research.

WORK NEAR NEWBURYPORT

Locating here early in April we established headquarters in one of the smaller hotels, and camp was not set up until the 25th. Our survey spent three weeks in the Newburyport sector doing extensive test pitting. These excavations resulted in very few objects. The fields flanking the river on either side have been under cultivation for three centuries, and all objects brought to the surface by plow or harrow have been picked up.

There are a number of shellheaps, rather small, scattered throughout the entire region. These were examined, but yielded very little and seemed to have been excavated long ago.

Just before reaching Newburyport the Merrimack widens and a delta is formed. The river divides itself into two channels and the area between is known as Plum Island which, at present, is a low, uninviting stretch of sand and marshland. According to some observers, this entire region, from Newburyport to Castle Neck (Ipswich), has changed much the past few thousand years. In Figure 2 we present a map locating the Indian remains at Castle Neck. It is reproduced from a large archaeological chart bearing the date January-May 1874—and drawn by Messrs. Brown and LeBaron, Civil Engineers, Charlestown, for the Peabody Museum, Salem. This map has not been published, and was kindly loaned by the Director, Mr. L. W. Jenkins. Our old map is quite important in that it shows all the shellheaps. Today, sand dunes cover them. The lighthouse, which was then so near the ocean that the keeper could call to captains of passing vessels, is nearly a quarter of a mile inland.

The lower part of Plum Island is not more than a mile from Castle Neck. Both places were favorite Indian resorts, and easily accessible.

In our study of the region the question of age of shellheaps and subsidence of coast line came up for discussion. In his valuable work on "The Geology of Essex County, Massachusetts," (Essex Institute, 1905) the late John Henry Sears illustrates stumps of white pine which were observed on Pond Beach, Nahant, in 1894.

An interesting letter was received from Dr. Douglas Johnson of Columbia University, author of "The New England Acadian Shoreline," (1925) in answer to an inquiry. He states: "The physiographic evidence indicates approximate stability for a period estimated from 3,000 to 5,000 years; while our most accurate tidal observations and precise leveling give no proof of any change in level during the last third of a century."

However, Indian sites at several points along Delaware and New Jersey coasts are partly submerged. Burials found by us years ago at the mouth of the Housatonic river in a shellheap were below water level.

Fig. 3 Merrimack River between Groveland and Haverhill. Indian sites in the foreground.

On Plum Island, a few sand dunes, or small elevations, are occupied by bungalows, but the island as a whole is not conducive to proper living conditions at the present time. That Indians resided here in large numbers is evident since hundreds of stone and flint tools, fragments of steatite vessels and pottery sherds, have been recovered during the past century. In the Peabody Museums, at both Harvard and Salem, there are large Plum Island collections, and an important local exhibit is owned by Mr. Frank B. Osgood.

John Smith, in 1614, mentions this place and says there were numerous "mulberry" trees. Messrs. Jenkins and Morse of the Peabody Museum, Salem, inform the writer that Smith probably saw small plum trees such as were common in early times.*

Leaving Castle Neck, Plum Island and the shore line, and proceeding up river, our first large village was where Newbury and Amesbury now

*Bulletin of the Essex Institute, Salem, Vol. 22, April-June, 1890, p. 121.

stand. Many specimens have been found on the flats bordering the river on either side. Above Haverhill there appears to have been no large village until we reach Cochickewick, or North Andover Lake. Today a small stream drains Cochickewick and enters the Merrimack a short distance below the city of Lawrence on the south side. In Indian times it must have been larger. The past twenty years a number of estates and extensive golf links have been established on the shores of the lake, but previous to this development Mr. Thomas Clegg made a very large collection of stone objects. Below the dam at Lawrence are extensive sand flats, particularly on the south side of the river. During the construction of the American Woolen Company mills many Indian objects were found.

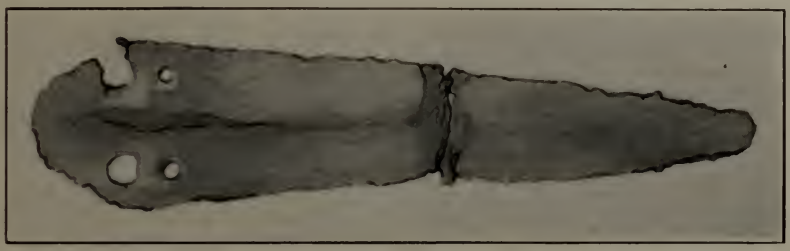
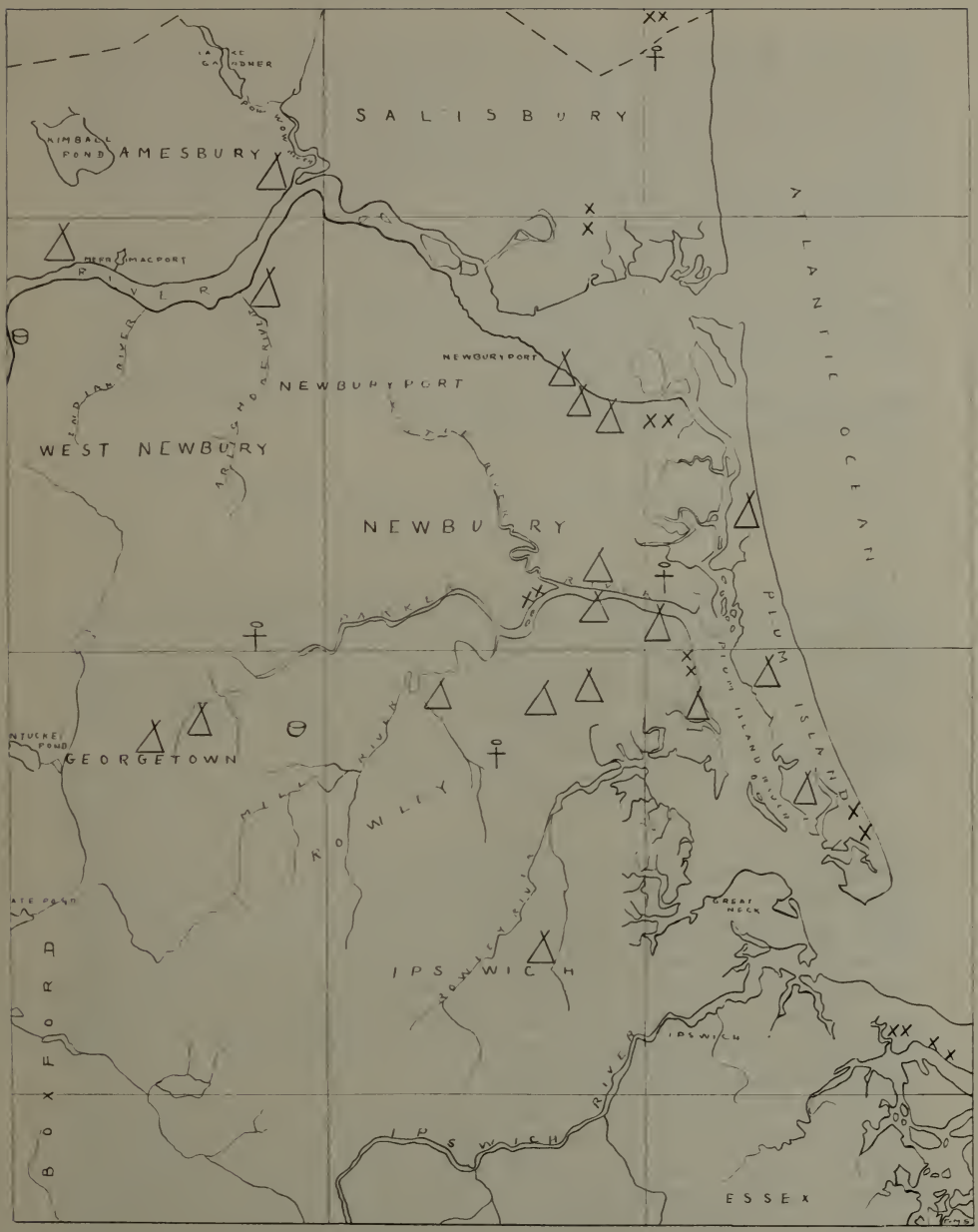


Fig. 4 Copper spearhead or knife. Found by Dr. C. A. Kershaw, Merrimacport, Mass. S. 2-3.

Since our work in shell heaps produced negative results we decided to search records kept by the Essex Institute. The writer found in the Peabody Museum Library very important published material extending throughout seventy years. Between 1860 and 1895 it was customary to hold frequent field meetings and discuss many phases of science—botany, geology, archaeology, biology, etc. Professors Putnam, E. S. Morse, Wyman, and Agassiz, then young men, attended these conferences.

Students of Indian history in New England will find much of scientific value hidden in these old records, nor are the descriptions confined to lower Merrimack waters, for finds from eighty miles north are cited. The writer has before him Volume 14 of the Essex Institute Bulletin, July-December, 1882. In this is an interesting description relating to a shellheap 100 feet in length, 60 feet breadth, and ranging from 1 to 3 feet in depth, which was located on an island near the mouth of the Ipswich River. Mr. John Robinson directed the exploration. To those who have maintained that shellheaps have not been intensively or completely excavated until recent years, we desire to recommend perusal of Robinson's report. All the shell and bone materials were preserved and identified. This heap was composed of both oyster and clam shells and where the shells were thickest, but few artifacts were discovered, a circumstance observed by us in explorations of similar heaps along the Maine coast. There were about 130 evidences of human

Fig. 5 Sites between
Legend descriptive



Newburyport and Lawrence
of symbols is on page 7.

handiwork recovered, including fragments of two pots, also portions of an adult and child skeletons, and a large number of human bones in fragments. Many tibiae and femura were split, as were the bones of moose or deer. In the discussion which followed the presentation of Robinson's paper, Putnam and others saw evidences of cannibalism. It is made clear that the long bones were not merely broken but were intentionally split open in order that marrow might be extracted.

During three weeks spent in the Newburyport sector the men tested extensively on all sites mentioned in the Colonial records and upon fields where specimens had been found. We hoped to discover ash pits or evidences of heavy occupation. We came to the conclusion that the Indians frequently moved their cabins, or wigwams, and, save at Castle Neck, concentration such as is common in the Ohio Valley or the South was practically non-existent between Haverhill and Newburyport.

THE FRANK S. OSGOOD COLLECTION

Newburyport, Mass.

Mr. Osgood's father was interested in Indian antiquities and began collecting some sixty years ago. Numbers of the specimens have been presented to the Peabody Museum, Salem. There remain something like 1,000 objects. Eliminating broken, or unfinished, tools, there are 700 chipped projectile points, knives, etc. Of these 110 are of quartz. Twenty narrow, slender points might be classified as drills or perforators.

In Mr. Osgood's exhibit are sixteen French and English gun flints. We were especially interested to note this, as it gives us a line of comparison with the prehistoric. The Indians of the lower Merrimack and coast had firearms for approximately two centuries; including the use of flint locks by the Whites, over 250 years. In view of the great numbers of English and French flints in use, the preponderance of pre-Columbian material is significant. Mr. Osgood and friends spent a great deal of time in past years searching fields, and he secured large numbers of objects from boys. The same holds true of all collections between Newburyport and the White Mountains, indicating that the vast bulk of material relates to the prehistoric rather than the historic period.

In his collection there are eight roller pestles, four of which are well made, and six grooved axes, two of which have rather pointed polls. Not many fragments of steatite vessels have been found. He possesses two broken winged, or pennate forms, and portions of two pipe stems. Both are crudely made. There is a pipe bowl, four inches in length, of red stone, apparently not catlinite. It has been broken from the base and the end cut and polished. There are three or four small earrings, or ornamental stones, one and one-half to two inches in diameter.

There are thirty-five plummets, and this would indicate that more plummets were in use than farther up the valley. One observes twenty ordinary celts, and nine adze blades. Two of these latter are specialized, one slightly ridged and highly polished. Both these types are illustrated in Figure 12. Apparently tools used in heavy woodwork.

One finds but five gouges in the collection, none of them specialized. He has six or seven large spearheads and knives of the Marblehead material (porphyritic felsite).

There is an interesting old-appearing scraper about two inches in length, very thick and patinated. Several identical ones occur in collections up river, and Mr. Howard Torrey, who examined our collection, informs me that this particular type occurs on Cape Cod.

There are a large number of lozenge-shaped points, not very large, and in this Osgood's collection parallels the one exhibited at Haverhill. Eight grooved stones occur. These are usually considered net sinkers. There is one edged tool, not grooved, about five inches in length, which deserves special mention. The top, or poll, is extended and it is not unlike forms from northern Canada or the Northwest Coast.

Mr. Osgood found on the village site numerous long, narrow polished stones, thin and slender. They do not appear to be worked, but are natural. The purpose is problematical. He owns two tablet-like ornaments, both broken; one of red sandstone presents a decoration composed of straight lines each cutting about two-thirds of an inch in length.

His artifacts were all found within six or seven miles from his home. Including the Salem and Cambridge exhibits, we have sufficient for accurate knowledge of type tools and objects, form, material, etc., used by Stone Age people of the region.

Mr. Osgood as a young man, forty years ago, found fragments of large pottery vessels at a certain spot in Rowley. This is some four miles down the coast from Newburyport, and near Castle Neck. He could not remember the exact location, and therefore our entire party, reinforced by five or six volunteers, spent three days industriously testing the Rowley sector. The men discovered a small unexplored shellheap but it was impossible to identify the bank, or knoll, where Mr. Osgood secured the unusual pottery fragments. They are larger, better preserved and of firmer texture than any pottery observed by the writer east of the Connecticut Valley. It is most unfortunate that our efforts failed. In justice to the survey it should be remarked that a total of fifteen persons examined various dunes, knolls and points scattered along the shore line. Eight shovelers dug some 700 test pits. There are numerous creeks and inlets and Mr. Osgood declared that it was on a slight elevation adjoining one of these where he made the discovery. Search should be continued by someone, for in all likelihood the find indicates a deposit of extent and importance.

Near Seabrook, N. H., we found in the woods several depressions,

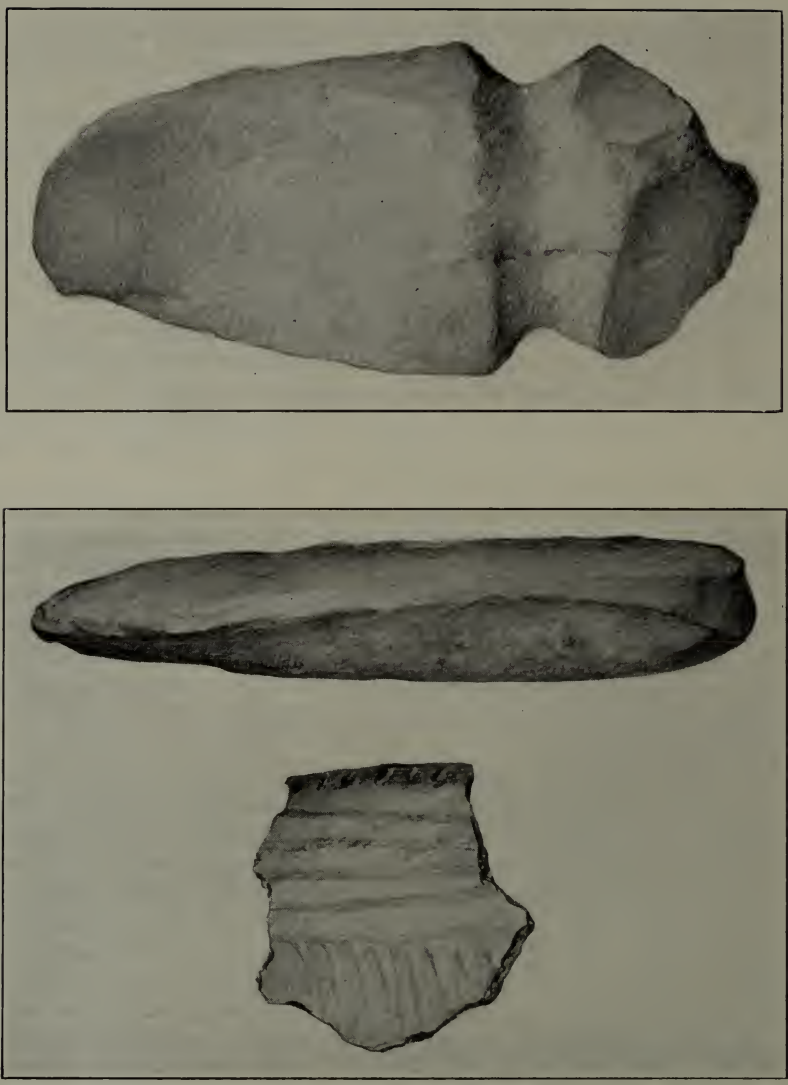


Fig. 6 Axe, found at Newbury, Mass.; gouge, found at Newburyport, Mass.; pottery from site of Lowell Textile School. S. 1-2.

apparently wigwam sites, some shellheaps and small fragments of pottery. At the falls on Parker River, in Byfield, many objects have been discovered in past years. Thorough testing produced negative results. On a point of land not far from Chain Bridge, a short distance above Newburyport, the men discovered several arrowheads and a rather roughly made grooved axe at a depth of about two feet.

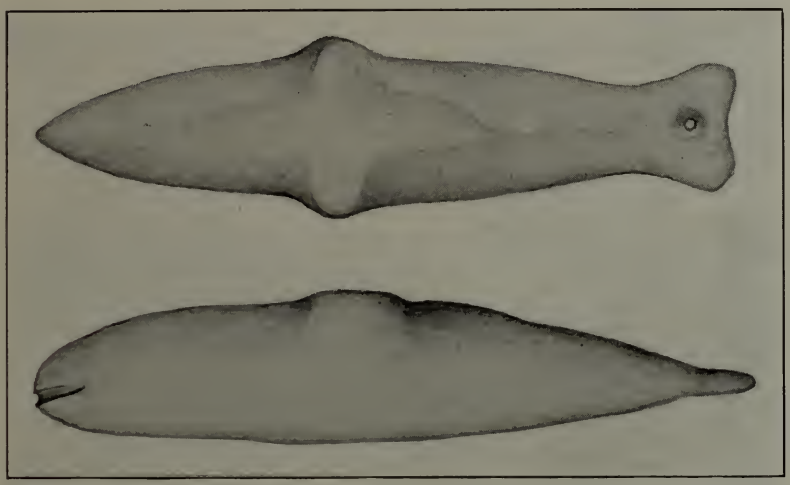


Fig. 7 Back and side views of effigy of a whale, found at Seabrook, N. H. In collection of Amesbury Natural History Society. S. 1-2.

April 29th the outfit moved by canoe and truck to Groveland where camp was established on the land of Mr. R. Dewhirst. Most of the outfit was transported by water in three large 20-foot canoes known in Maine as "guide model", wide of beam, and the bottoms flat. Such canoes carry a heavy load and are serviceable in six inches of water. At Groveland there is a small gravel ridge just opposite the railroad station. Here the owner, Mr. Parker, had found a skeleton many years ago and he was of the opinion that there were others. Local tradition persisted to the effect that skeletons had been found in elevations fronting the river between Groveland and Haverhill. The region was thoroughly tested but we were unable to discover burials.

The men moved up to Ward Hill Neck, where occurs a horseshoe bend in the river, and considerable swift water. The place was known in early times as Salmons Rips and many fish were taken. We spent about a week in this camp and studied in Haverhill a splendid collection owned by the Historical Society. Mr. Fred A. Luce permitted us to use two of his archaeological maps and gave us valuable information. Mr. Luce desired to study

the archaeology of his own region, and we, therefore, did not attempt research to any extent.

Later, the writer held two interviews with Mr. Luce. We discussed archaeological matters and our Haverhill observations are chiefly due to him. Mr. Luce has devoted his spare time during forty years to local study, and all his collections are carefully separated according to sites.

Fig. 8 Large stationary mortar (in granite boulder) not far from Harvard, Mass.

OBSERVATIONS ON THE HAVERHILL REGION

Figure 5 presents a number of sites between Lawrence and the mouth of the river. At various points have been observed at least twenty large or permanent mortars. All these occur in granite boulders. Archaeologists have supposed that non-portable mortars indicated a village, the hollowed stone serving as a community mill. Mr. Luce has identified the Indian trails, from Newburyport to Concord, and believes that six of these mortars were located at convenient points on such trails.

One of the largest prehistoric villages is that located at Kenoza Trotting park, now known as the Aviation Field, Haverhill. From here Luce secured about 700 objects. A large proportion of these are fashioned from poor quartzite, are crudely made and they appear to be quite old. It is fortunate that the Kenoza site has been carefully inspected these many years, because the collection assembled therefrom clearly indicates the prevalence of certain definite forms, which are easily differentiated from other sites in the Merrimack Valley.

Kenoza habitations covered some forty acres. Flanking the village is a large brook, famous for trout in early days. In Colonial times great schools of alewives ran up this stream to the lake where they spawned. Two hills protected the cabins from north winds.

As to the artifacts themselves, we obtained a pretty good idea of types, range, form and material from the Haverhill Society's collections which total nearly 7,000 objects. Search of some twelve or thirteen camp sites produced but one pipe. Two or three fragments of steatite dishes indicate very

Fig. 9 Panorama of Nashua Valley, taken from Miss Sears' residence, Harvard, Mass.

limited use of that material. There are numerous fragments of pottery, yet none are very large. As to projectile points, it is to be observed that although the Haverhill villages were by trail not more than thirty miles from those at Concord, Mass., there is a striking difference. At the latter sites, along both the Assabet and Concord rivers, are apparent many small triangular projectile points of white quartzite, whereas in the entire collection at Haverhill, there are not over ninety or one hundred—a very low percentage.

As to projectile points in general, we cannot in this brief paper present details. There are some differences which might be mentioned briefly. The large "hunting points" which persist farther up river are present on the Haverhill sites, but not in numbers.

Grooved axes are not as numerous as gouges. Celts are found fairly frequently. Ornamental stones, or problematical forms, are not at all common in the valley, or for that matter in entire New England itself.

Some foreign material is present, notably a very large and beautifully made knife, nine inches long, of yellow chert, almost identical with Pennsylvania jasper so common throughout that state, New Jersey and western New York. The woman's knife, of ground and polished slate, is represented by six or seven specimens, and there is also a small copper arrowpoint.

Many years ago Dr. C. A. Kershaw of Merrimacport found a copper spearhead, heavily patinated, on Indian Flat near his home. This is shown in Figure 4. Mr. C. C. Willoughby pronounces it an unusual form.

Fig. 10 Temporary field camp on the river near Franklin, N. H.

During the past forty years, so far as can be ascertained, there were six or seven Indian skeletons found in the vicinity of Haverhill. Including all possible sources of reliable information, Mr. Luce is of the opinion that not over fifteen or twenty have been discovered between Lawrence and the mouth of the river.

UP RIVER SITES

On the completion of the Haverhill observations, the survey moved to Lowell and our canoes were paddled up the Concord River to North Billerica. A brief detail upon our method of observation may be of some interest to readers. As the men proceeded by water they searched the banks on either side, and inquired of persons as to fields where Indian objects had been picked up. Two or three men in the beach wagon arranged for camping privilege some five or six miles up river. As soon as camp was established, the

men scattered out searching fields, and persons interested in local historical societies were consulted. Our cards containing information as to Indian villages inhabited in Colonial times were carefully read. When at North Billerica, a detail was sent down river to inspect a famous site. Three miles north of Lawrence, on the south side, is the Edward Shattuck farm, where was located one of the largest Indian villages in this part of New England. It was known in Colonial times. Before the textile companies of Lawrence erected the present thirty foot dam, there were falls opposite the Shattuck site, and great quantities of shad and salmon were taken each spring. Mr. Frank Sanborn, residing in Andover from 1875 to about 1895, was much interested in natural history and did considerable digging on the Shattuck site. He found several skeletons and numerous stone tools, ornaments, or

Fig. 11 Problematical form found on village site on bluff on west bank of Merrimack River at Amoskeag Falls, Manchester, N. H. Dr. Harry L. Watson Collection. S. 1-2.

other objects, which were later sold to the Society of Natural History at Worcester, Mass. It is impossible to identify the Shattuck finds in the Worcester museum, although two attempts have been made. In past years the writer went over to the Shattuck site, employed some workmen and dug many pits, finding one or two fragmentary skeletons, and two crude gouges. Our party further investigated this site for a day or two in September, as has been mentioned. Mr. Shattuck kindly permitted us to explore, but we were unable to discover graves. Sanborn must have thoroughly ransacked the place. It is most unfortunate that no records, maps or photographs are available. Shattuck's ancient cemetery has produced a large number of mortuary offerings of superior workmanship. In the Thomas Clegg collection are several hundred surface finds, mostly small. Many have found their way to museums at Salem and Cambridge. There is a small collection here in Andover, and the Society for the Preservation of New England Antiquities has some. Mr. Luce secured seventy or eighty, and quite a few are in the Samuel Stearns, exhibit, Lawrence High School. All told, Mr. Shattuck's land must have produced two or three thousand objects.

At North Billerica we camped at the Talbot Mills dam. We were assisted materially by Mr. Fred G. Rolfe of Lowell who spent several days in camp. There is a long sand ridge flanking the Concord River, and where the dam is located were originally falls, and the men found about 20 rough turtle-backs a few inches below the surface at a certain point in this sand ridge. Mr. Rolfe had discovered a cache of 150 leaf-shaped blades, which are now in the exhibit of the Society for the Preservation of New England Antiquities. The cabins, or wigwams, appear to have been scattered and

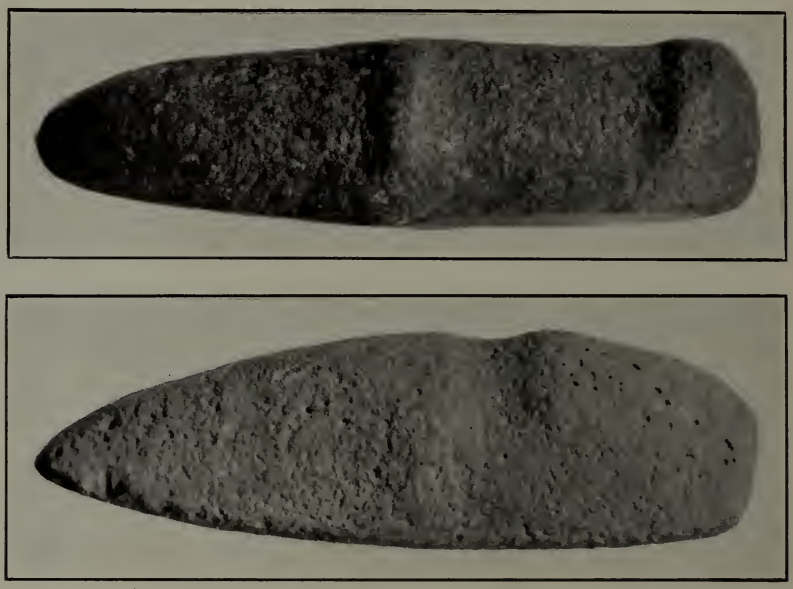


Fig. 12 Two heavy adzes from lower Merrimack Valley. Andover Collection. S. 1-2.

there are not many ash pits although several lined with stone have been dug up by local collectors. We were shown a number of specimens in the residence of Dr. A. Warren Stearns at Billerica Centre. Our survey was unable to find any undisturbed ash pits, or storage pits, although we did uncover two decayed skeletons in the sand ridge referred to. A thin layer of charcoal covered each and there was a neatly made spear point, some four inches in length, alongside one of the skulls. It was impossible to preserve the bones.

This elevation appears to have been occupied for a distance of more than a mile, and chips of quartzite, quartz, chert and felsite are very common.

Old residents averred that numbers of skeletons had been found when a well was sunk upon a property located on High Street, Lowell. The writer called on the lady who confirmed the report, and she granted permission for

exploration in the rear of a tenement occupying the next lot, and which she owned. However, when our crew appeared the following morning, the lady declined.

Over the river, opposite Lowell, is located the large plant of the Lowell Textile School. Here three or four skeletons had been found when the boiler house was erected. The authorities permitted numerous test pits, but we were unable to discover other burials. From the end of the bridge and extending down stream for nearly half a mile a stretch of land more than 1,000 feet in extent has been filled in or disturbed.

Our party cruised the ground carefully. Mr. Rolfe had found many fish spears and scrapers. We secured a few and observed quantities of chips and spalls scattered among modern city debris. The gentle, sandy slope extending down the north bank and directly opposite extensive falls afforded a splendid situation for an Indian settlement.

Here at Lowell was Wamesit, a village of the Pennacooks. Eliot had established a "praying town", but during the Narragansett war his converts were scattered and the few surviving Indians sold to white conquerors their heritage and moved to Canada. This place was famous in early Colonial times, yet we were unable to make precise identification of cabin sites, due chiefly to the presence of a large city.

All along the river, wherever ledges or boulders obstructed the channel, nature has formed most convenient places for the taking of fish. The first Red Men in the valley sensed this and congregated at such strategic points during the fishing season. It is quite likely that the population varied. A few large centers, such as The Weirs, Manchester, Lowell or Shattuck's, may have been inhabited permanently. Since our New England Indians depended chiefly upon hunting and fishing, we believe that they did not remain long in one place.

The Survey moved to Concord, Mass., proceeded up Sudbury river, and went into camp upon the land of Mr. Laurence Clark. Here upon a high bank flanking the stream is a large shellheap composed of fresh water unio. It has been frequently searched and was described briefly in Shattuck's "History of Concord," 1835. Thoreau also visited the site.

Mr. Adams Tolman, in a paper entitled "Indian Relics in Concord", read before the Concord Antiquarian Society in the spring of 1902, writes as follows:—

"The shell-heap, or 'clam hill' as it is locally termed, is a more interesting object, as it is one of a class of the remains of primitive man that are found very widely diffused along the sea-shore and the banks of considerable rivers, not only in America, but in Europe as well, and to which archaeologists have given the name of kitchen middens. It is situated on the left bank of the river (south branch) a little distance above the F.R.R. bridge, just where the river makes a sharp turn. The bluff is perhaps fifteen feet high, and the heap contains (or did contain, the shells having been

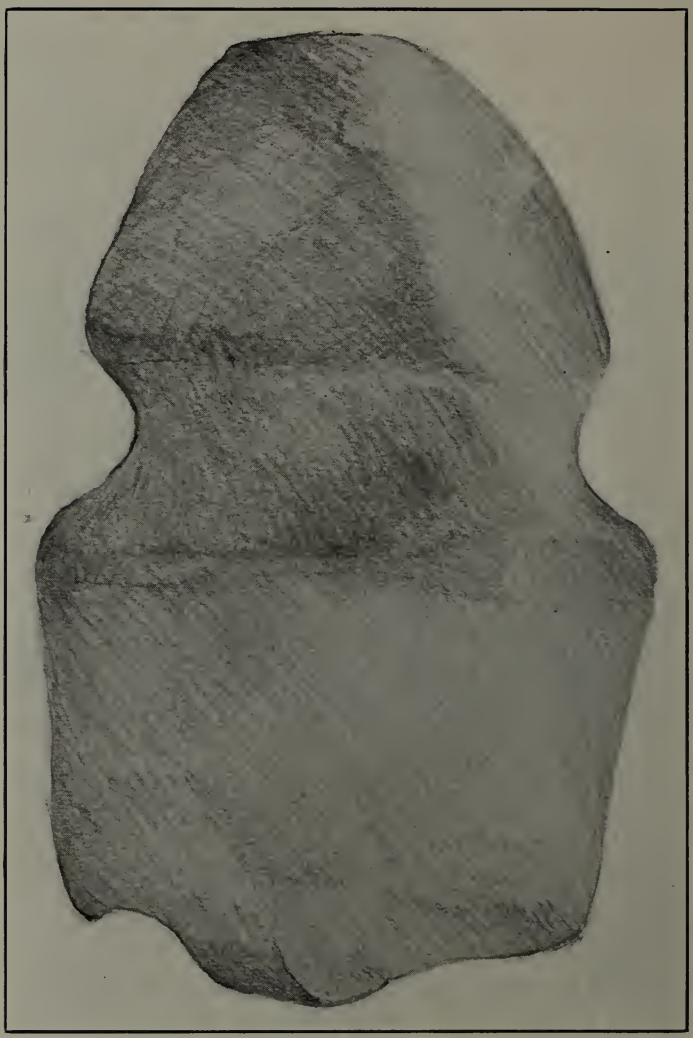


Fig. 13 Grooved axe found on estate of Miss Clara Endicott Sears, Harvard, Mass. S. 1-1.

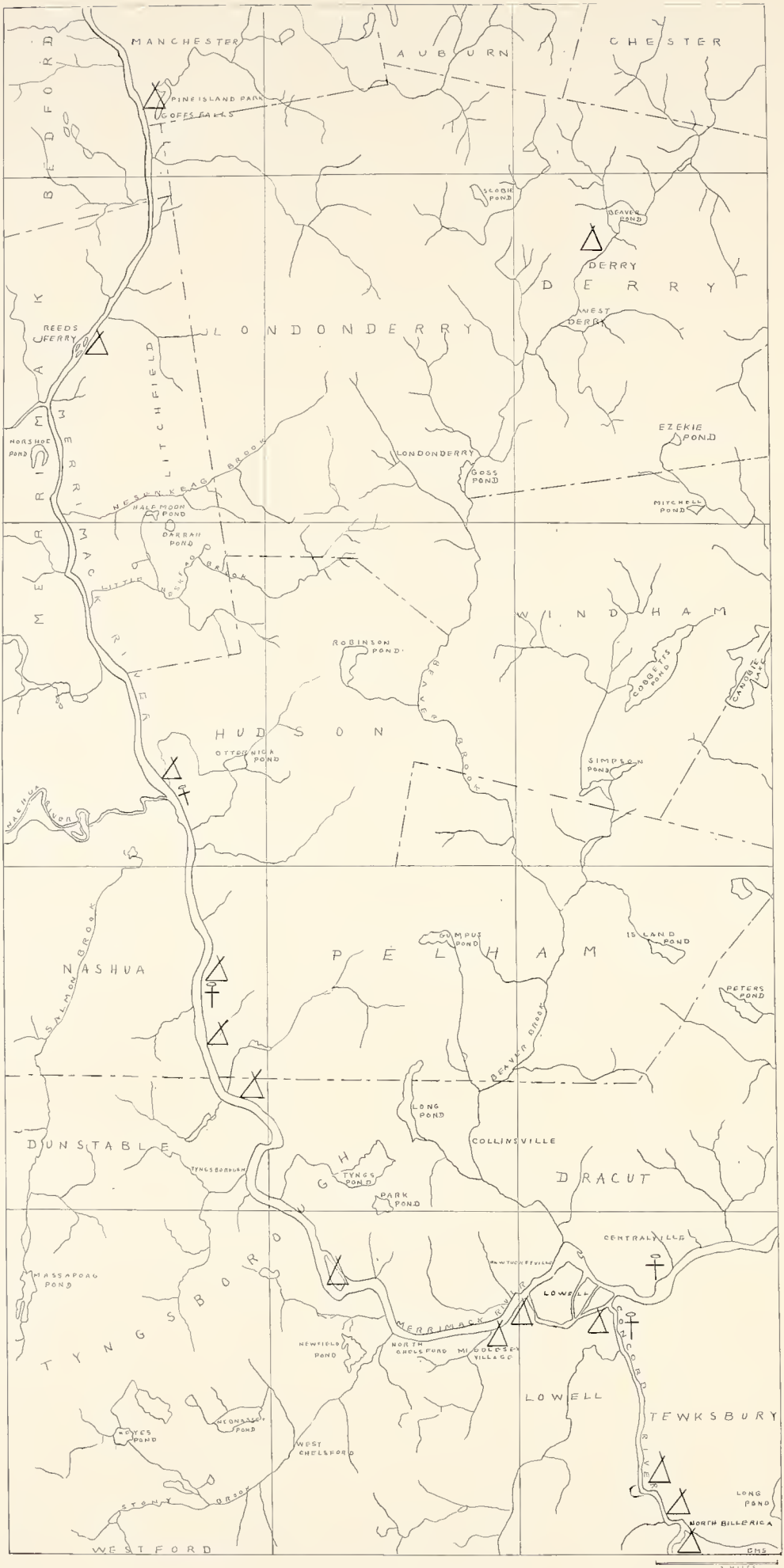


Fig. 16 Lowell, Mass., to Manchester, N. H.

carried away as dressing for the land) hundreds of bushels of shells of the river mussel (Unio). Among them have been found bones of the smaller wild animals including deer, and of the game birds common in this part of the country, together with fragments of stone implements and the like. Evidently here was an aboriginal feasting ground, a sort of Indian Downer's Landing, where the savage picnickers used to resort for clam-bakes. It gives

Fig. 14 Chipped axe and celt from Nashua Valley near Harvard, Mass. Miss Sears' collection. S. 1-2.

one a good idea of the appetite and digestive powers of the hardy sons of the forest, to find this visible witness that they could and did eat and relish the river mussel, the most utterly uninviting and nauseous of any of the living products of our river."

In view of the previous description of the heap we entered upon our exploration with considerable zest. It is quite unusual in New England to find a deposit composed of fresh water shells. Although a great deal of

material had been hauled away to fertilize fields, the heap was found to be two feet deep in certain places. It originally covered about half an acre. Today the extent is considerably less. Bottom layer shells were very badly decayed, there was considerable ash, many chips and rejects, a few animal bones and very few projectile points. Apparently some hundreds of perfect

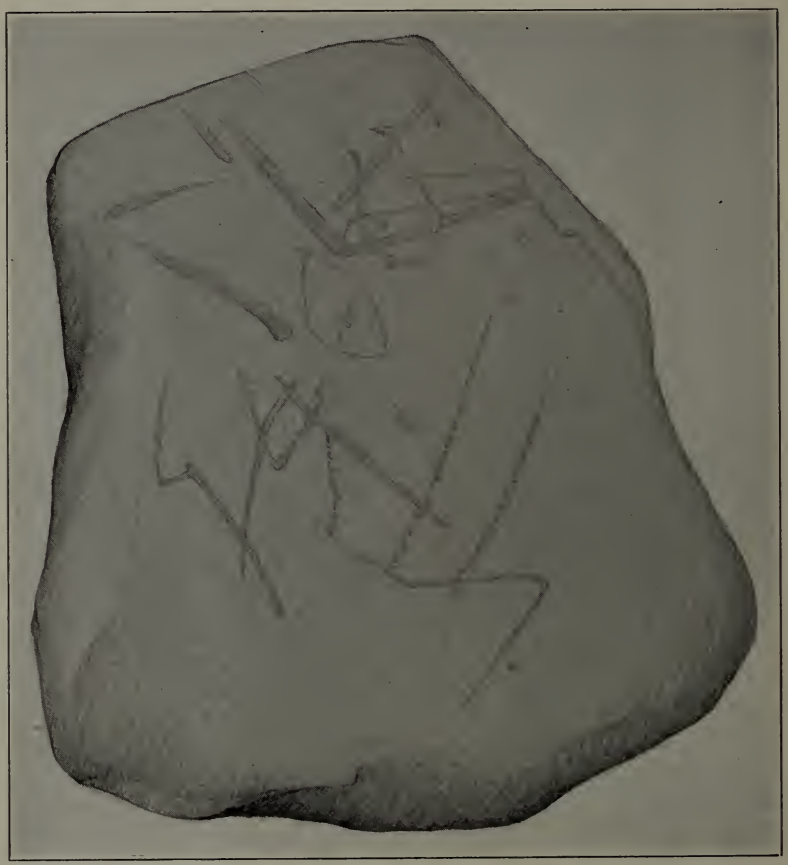


Fig. 15 Large smooth stone, about 14 inches across surface, on which designs or marks have been cut. Miss Clara Endicott Sears' collection, Harvard, Mass. Found near Nashua River on Camp Devens reservation.

points were found from time to time during farming operations and are in the Concord collection, where they may be studied. Before surrendering the pen to Mr. Smith, we might remark that at the conclusion of the expedition a careful estimate was compiled with the help of Mr. Smith as to the number of collections obtained in the vicinity of Concord in the Assabet,

Sudbury and Concord basins. He presents his totals upon this page. There may be others of which record is lost.

NOTES UPON THE CONCORD RIVER VALLEY

By Benjamin L. Smith

Musketaquid, the aboriginal name for Concord, was one of the several towns of the Nipmuc Indians, who were a group subject to the more important Massachusetts tribe.

The settlement does not appear to have been centered about any particular spot, but rather was a more or less loosely related series of large camp sites, with many more smaller, and several very insignificant ones scattered about.

The total number of places which we may definitely state were once inhabited by Indians, and which may reasonably be considered to have belonged to the Nipmuc town, totals approximately forty.

A glance at the accompanying map will give a good idea of the general distribution of the sites, and also the arrangement of the brook and river system.

The two rivers, the Sudbury and the Assabet, meet at "Egg Rock", and form the Concord, which flows northward to meet the Merrimack at Lowell. All three rivers are quiet, sluggish streams, and have a habit of overflowing their low banks on each spring thaw. The Indians therefore built their camps and villages on elevations and knolls, and it is safe to say that almost every suitable spot near the rivers and tributary brooks was used by them to a greater or lesser extent.

The valleys today present a highly cultivated appearance and it is a regrettable fact that a great number of the cultural sites have been so churned up by successive plowings that almost nothing instructive remains. The sole proof that the Indians ever lived there consists of a few widely scattered stone tools, mostly fragmentary or rudimentary, and multitudes of stone chips. Everything else has been picked up or destroyed.

The territory about Musketaquid has been surface-hunted hard and steadily since the days when Thoreau roamed the woods and fields. The collections resulting from this activity number about thirty, with a specimen total of approximately twenty-five thousand. About three-fourths of these relics are privately owned.

For these reasons, excavation in Concord is highly unsatisfactory, and usually productive of nothing whatever. To be sure, there has been very little of it done, but the results obtained were so barren that each attempt by individuals was speedily abandoned. During the summer of 1930 the Merrimack Archaeological Survey did more excavating than all of its predecessors put together, and yet the results from this branch of its work were largely negative.

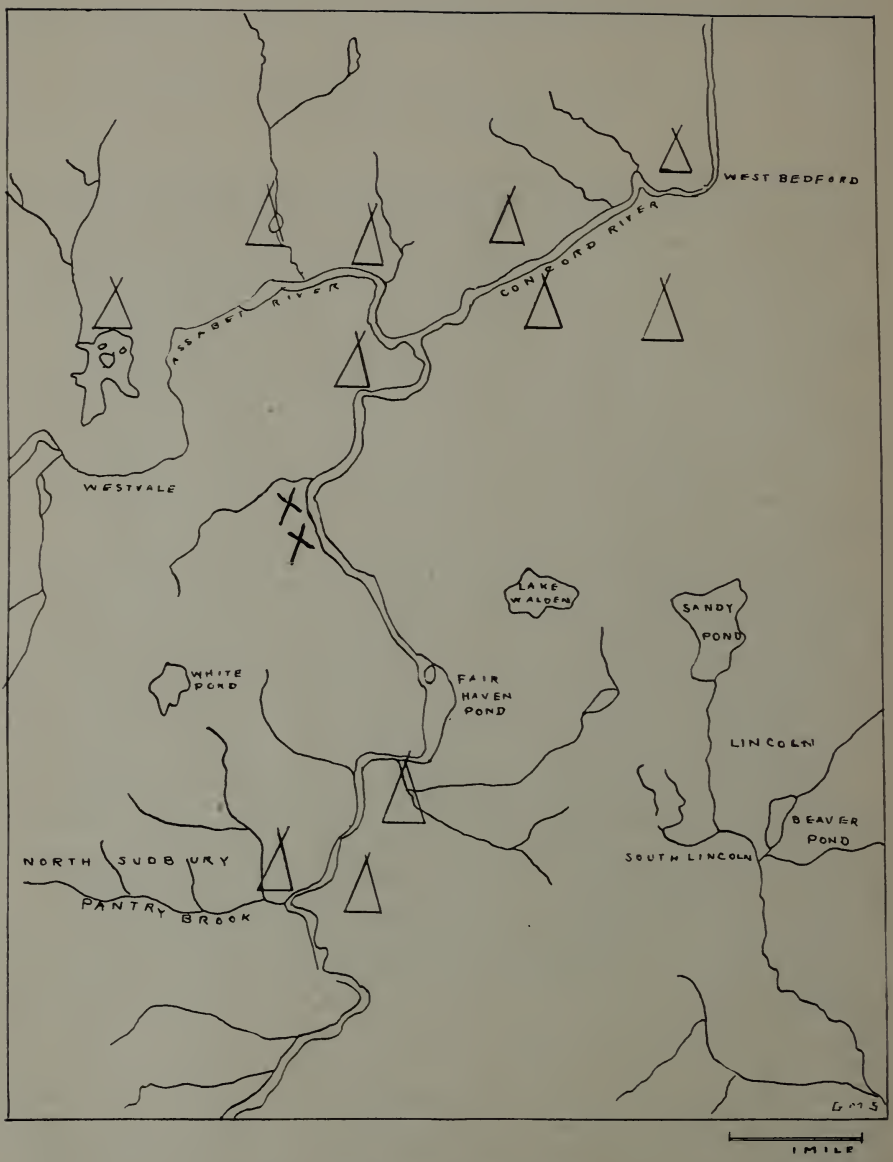


Fig. 17 Sites around Concord, Mass.

During the spring, much preliminary work was done, such as locating and mapping sites, inspecting and listing collections, etc., and certain things were noted which were listed for the Survey's special attention. One of the most important of these was the curious lack of burned pottery. The combined collections available for study contained about fifteen tiny sherds, and there was no record of any pottery ever having been found below ground, even in the shell-heap at Site 18. The most important single result of the Survey's investigation was the discovery of a great fire pit containing over seventy-five sherds, which enabled us to determine the fact that the Nipmucs were at least as proficient as the average New England Indian in the art of ceramics.

In other branches, the work was productive of about the results which those familiar with the district expected. Small collections were made from the surfaces of the several sites, and a few larger artifacts were recovered from fire pits, and from the shell-heap. In the main, the condition of the district was a disappointment to everyone.

The Survey dug hundreds of test pits in an attempt to locate the cemetery which all thought must surely exist, but not a single scrap of human bone was uncovered. In this connection, it might be well to state that from all records we have been able to find, there have been but seven Indian skeletons exhumed by design or accident since the Indian became a subject for archaeological investigation. No true cemetery has ever been found in Concord.

The district presents a series of very interesting problems which seem to merit a more extended investigation than was possible with the limited time available last summer. The chaotic condition of the sites on or near the river banks was responsible for the small amount of material uncovered, but there are other sites not so well known which are further back, and away from the cultivated areas, and undoubtedly some exist which are at present entirely unknown and hence undisturbed. It is in such places that the material for the final pages of Concord's aboriginal history will be found.

Prof. Elston of Dartmouth has kindly identified samples of chips picked up on the several sites. It can be stated definitely that the principal materials used by the Indians were: quartz, quartzite, porphyry, felsite, trap and shale. Scattered fragments of true flint and rhyolite appear, but do not constitute an appreciable proportion.

We have carefully analyzed several of the largest collections in Concord with the intention of determining the prevalence of the various types of artifacts, and the following table gives the result.

"Flint" arrowheads	38.0%
Quartz arrowheads	28.5
"Flint" bird points	8.0
Scrapers	4.4

Perforators	3.2
Gouges	2.5
Hammer stones (round)	1.9
Hammer stones (chipped)	1.6
Spear heads	1.5
Plummets	1.5
Pendants	1.2
Slate knives	.8
Chipped knives	.8
Bipennate forms	.7
Sling stones	.7
Axes	.6
Pestles	.5
Sherds	.5
Celts	.5
Gorgets	.1
Miscellaneous	2.5
	100.0%

The arrowheads may be divided into classes such as large and small triangular war points, barbed and unbarbed, long (3 inches) and short (1 inch) hunting points, bird points (largely quartz) seldom exceeding 1 inch in length. One type of hunting point seems to be a rather specialized development and may be briefly described as follows: 3 inches long, very long sharp point, with shoulders rather than barbs, and a short thick straight base. Their appearance is one of hunch-backed deadly efficiency.

Spearheads average about 4 inches in length with occasional specimens as long as 5 inches. They are rather wide and thick, of irregular shape. The quality of chipping is medium, and about on a par with that of the arrow points. A few fine examples have been found but they are exceptional. They are as a rule wide-shouldered, with straight bases.

Knives and scrapers show little attempt to produce anything other than utilitarian objects. They are generally made roughly elliptical, and rather thin with only part of the edge (usually the longest straight part) fit for use. The scrapers have a thickened working edge but are otherwise not very different. The material is usually porphyry.

Perforators are more carefully made than any other objects, and are the usual types. They average from 1½ to 2 inches long with a few as long as 3 inches. The bases are flattened ovals or T-shaped, and the shanks have either a very elongated oval, or roughly square cross-section. Many of the longer drills were broken in manufacture or by use, but the shorter ones are almost always intact.

Gouges are from 3 to 8 inches in length, roughly finished with polished

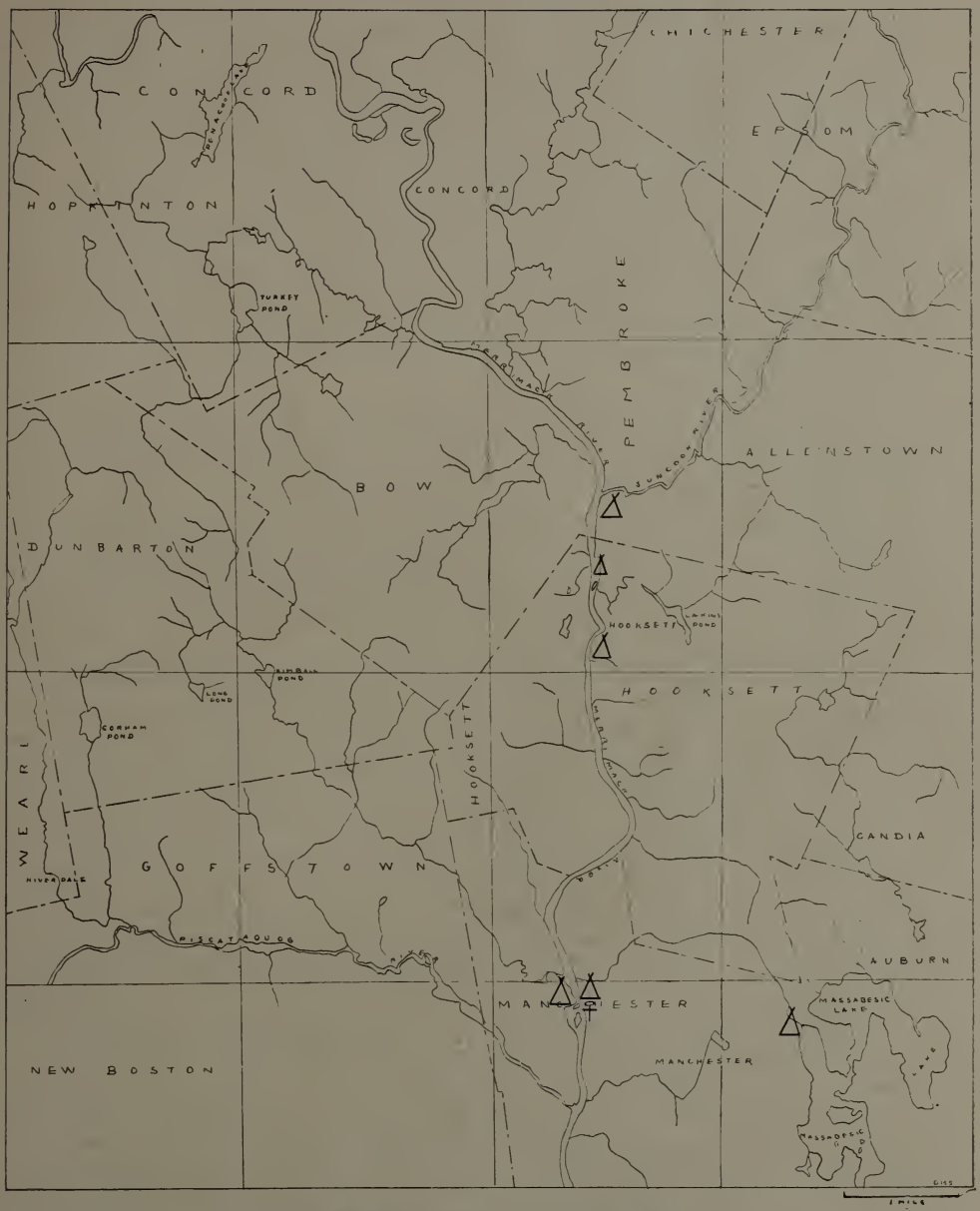


Fig. 18 Manchester, N. H., to Concord, N. H.

edges. Many have been shattered by heavy blows, and all show signs of hard usage on the polls and bits. One or two gouges have been polished enough to remove the peck-marks but none have a high gloss. A few are single grooved, but most of them were equipped with a well-pronounced knob on the under side. As in any locality, a few fine gouges have been found, but they constitute the exception rather than the rule.

Axes of three types are found, single, double-grooved and notched axes, with the single-grooved by far the most predominant. The blades are thick, strong and rather blunt, with fifty percent showing signs of polishing at the edge. Most of them are battered on the polls and edges, indicating they were roughly used, and that the material was inferior. They taper slightly from the grooves and average 2½ inches in width at the edge. They are all medium or small sized.

Celts are very scarce and are of two types, the small, ungrooved, triangular type used in bone sockets, and the larger, also ungrooved type about 5 inches long with a rounded poll one half the width of the blade. All are semi-polished and are well made with sharp cutting edges.

Pestles occur in all sizes from 3 or 4 inches to 2 feet in length and ½ to 2½ inches in diameter. They are well made, finished smoothly but not highly polished. Both ends are usually rounded as though by use. They were made from a soft sedimentary stone resembling slate, and some have been flaked away in spots, apparently by frost.

Plummets are rather plentiful, and are extremely varied in quality and shape. As a rule they are the usual elongated egg shape, with a well pronounced groove and flattened knob at the smaller end. Little attempt was made to polish them and the peck-marks are usually clearly visible. A few specimens are symmetrical, smooth, finished objects, and at least one is fluted. The material was any suitably shaped pebble that was not too hard.

Sling stones, or grooved hammers, show the same type of workmanship as the plummets. They are found from a few ounces to two or more pounds in weight and have a shallow pecked groove around the entire circumference. As they seldom show signs of rough usage it would appear that "sling stone" was the correct name. They may have been used as heavy plummets.

Hammer stones may be passed over with the statement that they are of two types, salt water beach pebbles, and rough blocks of porphyry with pronounced edges. All show signs of battering.

Bipennate forms are scarce and usually broken in two along the perforation, by frost. They are of the more elementary forms, oval shaped with thick hubs, and large reed drilled holes. The wings have been smoothed but not highly polished, and show little imagination as regards design. Certain unfinished specimens indicate that they were pecked into shape, drilled and then ground down to the final form.

Ground stone-work showed to best advantage in the manufacture of

Fig. 19 Concord, N. H., to Webster Lake

semicircular slate knives, the best of which were ribbed along the slightly concave back, and ground to a sharp smooth useful edge. Several complete ones have been recovered, but frost and plowing have broken the majority.

Pendants were made from oval shale pebbles smoothed, and perforated at one end. A few show signs of decorations, such as notched edges or meaningless incised lines or scratches, but most of them are plain.

Gorgets, of which there were very few, almost invariably suffered from the frost, and only one complete specimen exists. They were as a rule about 2 by 4 inches by ¾ inch and were well smoothed and squared with two perforations near the center. It is unfortunate no more of these beautiful decorations have been recovered.

If we may judge the pottery of the valley by the examples found in the fire-pit mentioned above, we may state the following facts. It is of fairly good clay, tempered with sand containing many small pebbles. The centre of a broken sherd appears almost black, while the inside and outside surfaces are reddish brown. A few examples present a black inside or concave surface, while the outside or convex surface remains the same shade of red-brown. Ten percent of the fragments recovered are decorated with rough indentations which were made with a double-pointed tool. This is proved by the regular reoccurrence of perfectly spaced pairs of dots. Other indentations were made with a single-pointed tool and are much deeper and more irregular. The pottery is hard, and in good condition.

Under miscellaneous has been listed such objects as soapstone bowls, paint cups and the heterogeneous, unclassible material always found in complete collections. These are interesting in themselves yet insufficient in numbers for our purpose.

In conclusion, it would appear that the culture in the Concord River Valley was one of intense utilitarianism, with little time or trouble taken in the name of art. The implements are sturdy and well adapted to heavy service—for which we assume they were intended. The preponderance of poor material was not conducive to production of artistic artifacts.

EXPLORATIONS AT HARVARD, MASS.

After completion of the Concord observations, the expedition moved to the valley of the Nashua River at Still River, a suburb of Harvard, Mass. We remained here two weeks. A personnel of fourteen industriously searched the surrounding country in the interests of the American Indian Museum established by Miss Clara Endicott Sears. On the Nashua is located an extensive Government reserve including a large artillery and rifle range under control of Camp Devens. The Commanding Officer kindly gave permission for researches on government property. Our men were cautioned, since the range was in use at certain hours nearly every day, and observations were carried out satisfactorily.

Just below the three museums established by Miss Sears, there is a long sand ridge where local tradition maintains an Indian cemetery was located. More than 400 pits were sunk, we secured numerous pottery fragments, arrowpoints, a stone hatchet and broken gouge. We also found at two spots small flat stones covering a space about three feet in length, two feet in width and placed some thirty inches below the surface. They did not indicate burials, there being no bones, very few chips and no ashes. They could not have represented storage pits or caches. The purpose of these must remain a mystery.

We decided to examine the territory thoroughly and sent out several parties from our base camp at Harvard.

Fig. 21 A portion of Lake Winnepesaukee, the narrows near Wolfeboro.

On June 30 seven men were sent over to Framingham, head of the Nashua River, and they found a large fire-pit containing a few chips and several arrowheads at the north end of Farm Pond. A Miss Pray presented us with a small collection of projectile points.

July 9 and 10 the expedition visited Clinton, Lancaster, and Groton. There is quite a collection in the Historical Society at Groton, found upon a site near the "Red Bridge". Colonial records refer to a populous town in Indian times at this site. We found the land in turf and were unable to test pit to any extent.

The region around Harvard and Still River is quite interesting. Although no evidences of heavy Indian occupation were obtainable, we are convinced that farther up the Nashua, near its head, better results might be obtained. Mount Wachusett lies a little west of north, some twenty-five miles distant, and King Philip and his councillors visited that spot in order

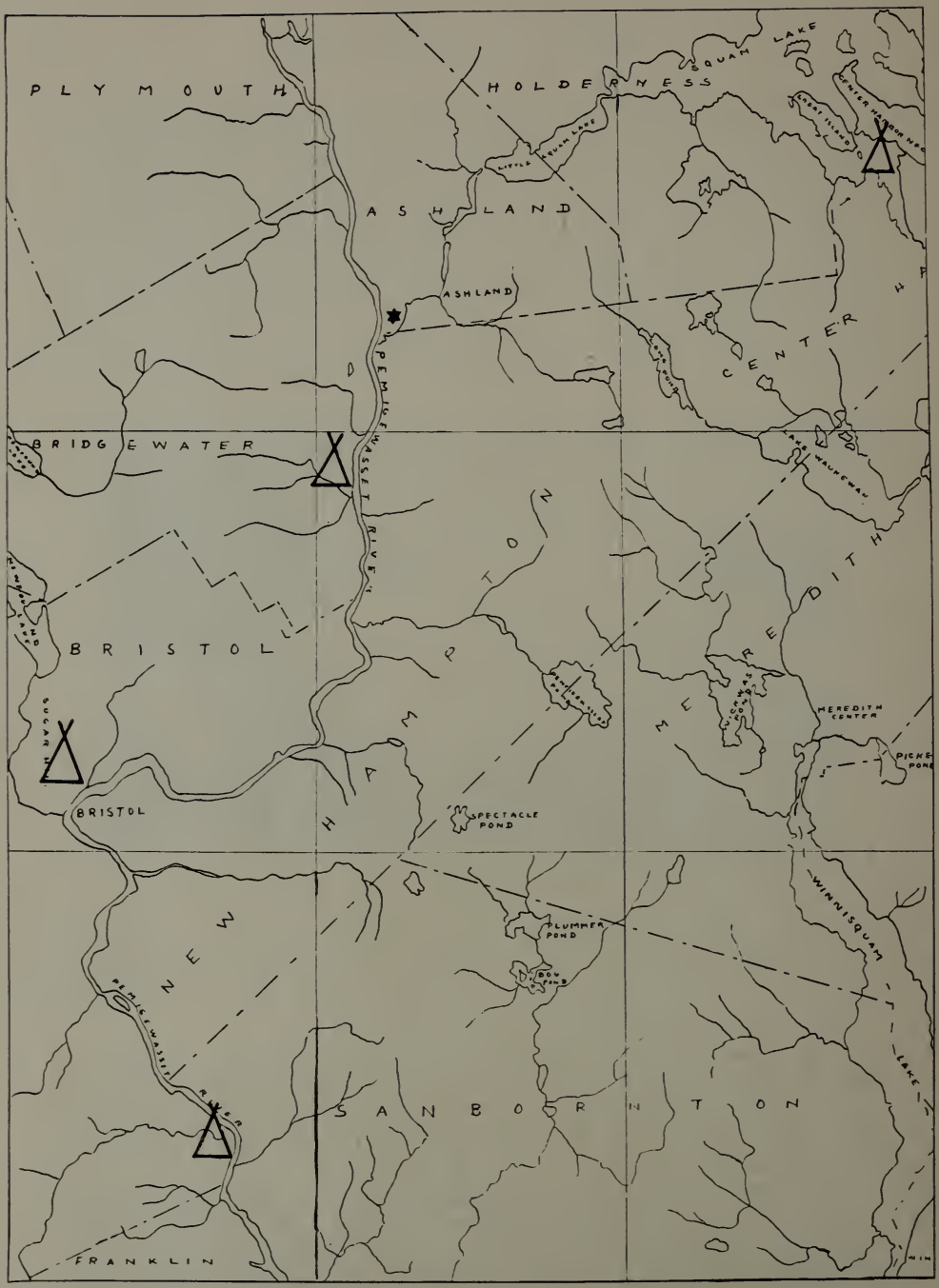


Fig. 20 Pemigewasset Village sites.

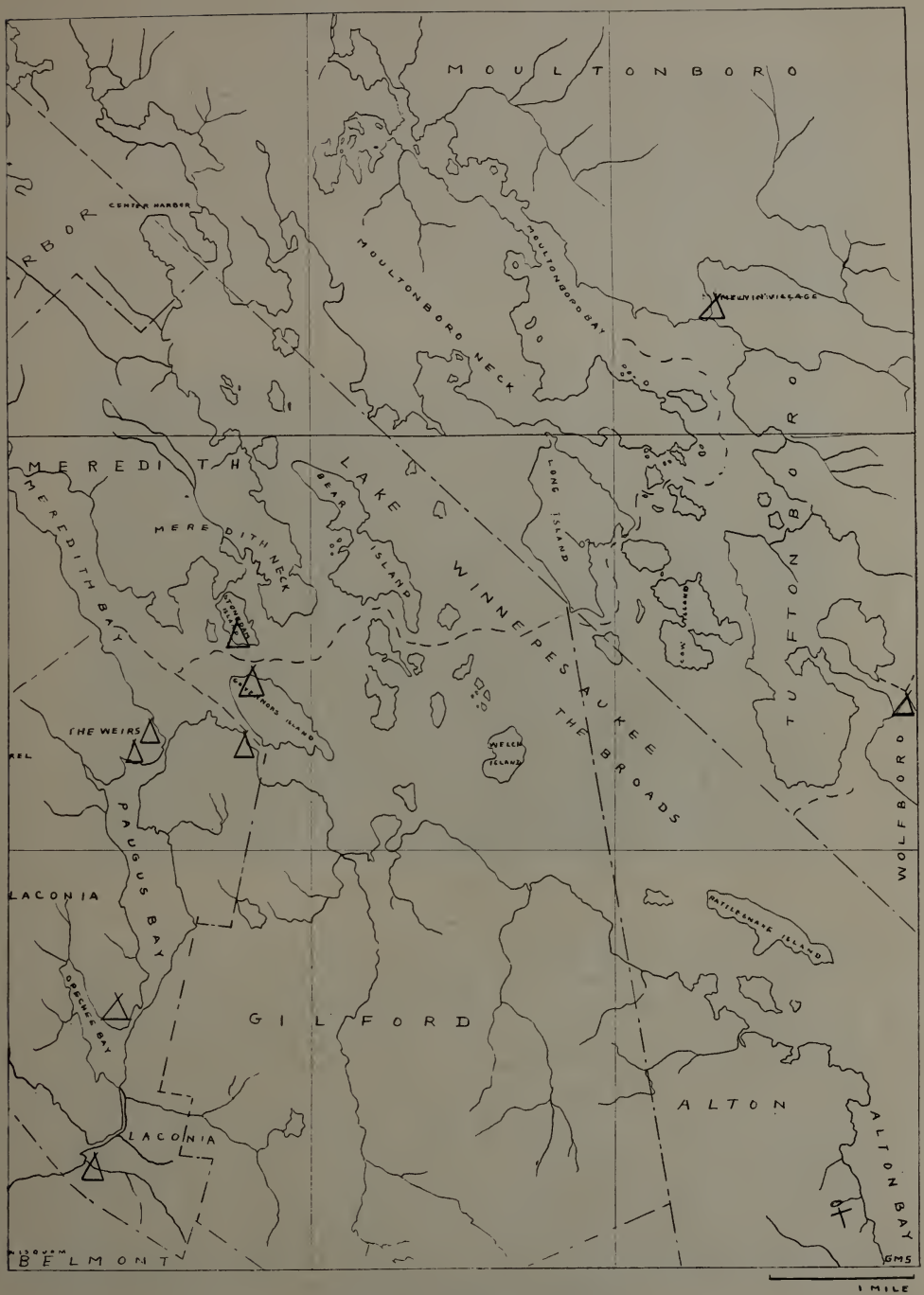


Fig. 20a Lake Winnepesaukee.

that they might without disturbance perfect plans for their attacks upon the Whites. The entire party visited Wachusett on two occasions, but were unable to discover traces of camps. Undoubtedly, Metacom, and his leading men made pilgrimages from the Narragansett country, far to the south, to this outstanding landmark. The upper portion of the mountain is rough and stony, there are a few overhanging rocks but no true caverns.

Miss Sears' Indian museum contains a great many cutting tools, projectile points and knives found within a radius of ten miles. These present prevailing types in use among Indians of the Nashua Valley. Two are

Fig. 22 Stone-lined fire pit, The Weirs.

shown in Figure 14. The survey is greatly indebted to Miss Sears for her interest in our work and many kindnesses.

The entire region around the head of the Nashua and Sudbury Rivers is promising, and should be carefully examined at some future time. Sudbury River Falls at Saxonville was a favorite Indian site, and it, as well as other sites near Lexington, Framingham, Lancaster and elsewhere are mentioned at length in Colonial records. Our limited space does not permit detailed reference, but the cards compiled by Mr. Hodges are accessible to students.

FROM PLYMOUTH TO FRANKLIN

After completion of these observations we moved the entire expedition early in July to Plymouth, N. H. From this point we worked by canoe down

stream. Having established camp just below the mouth of Baker River, a detail was sent to Wolfeboro where they made preliminary inspection of sites and were helped by Rev. Oram T. Headley, Mr. Meader, and others. They found fragments of pottery along the lake front and reported Wolfeboro as a favorable location. From Plymouth another party was sent to Newfound Lake. In the Proctor collection at Franklin are a number of objects from this place, and also some at Manchester. The history of Bristol, New Hampshire, refers to a large and important village on the shores of Newfound Lake. The old record states that a prodigious number of

Fig. 23 River near Concord, N. H.

flints and rejects, indicating manufacture of implements, occurred here but although the men made diligent inquiries and searched industriously they could not identify the site. As fields formerly cultivated have now grown up to bushes and the lake shore line is quite extensive, it would be impossible to relocate the old workshop save through persistent efforts lasting several weeks.

During this research four men placed a canoe on top of our beach-wagon and proceeded twelve miles up Baker River. The canoe was put in just below some falls and the party proceeded slowly down stream, searching both banks carefully. Baker River heads in the gulches of Mooselauke Mountain, is a very clear stream, and its sandy bed afforded splendid spawning ground for salmon. Because of floods, the narrow bottom lands are covered by silt deposits and we were unable to make any discoveries. We

Fig. 24 A fire pit on Clarks Island, Silver Lake, N. H.

observed many large brown trout in deep pools. Brook and rainbow trout are taken by fly fishermen in the rapids.

As we came down the Pemigewasset we found pottery, arrowheads, flint chips here and there, particularly in the vicinity of Bristol, N.H., where the outlet of Newfound Lake enters. Just below this town are some considerable rapids and at one point falls about three feet in height. The channel is obstructed by boulders and masses of ledge which extend across the stream. Freshets have removed soil for a short distance from either bank. At one point is a deep eddy close to a ledge varying from six to ten feet above the water. Nature has provided at this spot one of the most convenient places for the taking of salmon. Indeed, it is almost a natural trap. The fish proceeding upstream pause in the eddy, which is opposite the ledge, then make a jump, varying from three to five feet, and work upstream through a narrow passage way in the ledge about three feet in width and through which the water pours in considerable volume. There is a little bench in the ledge—in fact, a natural seat. Modern fishermen make use of it. The seat is highly polished even to this day, and the gloss is not unlike that observed on rocks in certain caverns inhabited by primitive man in France and in the Ozark mountains of our own country. This polish is not due to the action of logs or pulp wood, since it is nowhere present upon rocks or ledges elsewhere on the river. We came to the conclusion that Indians for hundreds of years utilized this particular spot for catching salmon by means of dip nets. The setting is perfect for such purpose. Before the forests were cut off, it is quite likely that there were few floods. At all points up river we found no chips, broken points or other objects near the water save where the banks are high. Undoubtedly the Indians did camp in the space between this ledge and the bank farther back to the east, but most traces of life have disappeared. We photographed the rocks and Mr. Cheever, our artist, made a painting visualizing what occurred long ago. It is reproduced in Figure 1.

From here we proceeded onward, running our canoes through the rapids with some difficulty and made camp at Franklin, N. H., just above the dam. Here we carried on rather extensive research. We were aided by Mr. Sulloway and other citizens. Our men were sent out in relays to examine the elevations between the two rivers. The Pemigewasset and Winnepesaukee join at Franklin, forming the Merrimack; and the long peninsula between these was a favorite Indian resort. Bones and objects have been found during construction of mill buildings or digging of cellars. Local tradition is to the effect that quite a number of Indian skeletons were found in high sand bluffs not far from the present residences of Mr. Warren Draper and Mr. James Aiken. We explored, but no burials could be discovered. The Ox-Bow, now called Odell Park, was an ideal spot for an Indian village and from that site Mr. Frank Proctor obtained a large portion of his collection, including the engraved stones to which we have re-

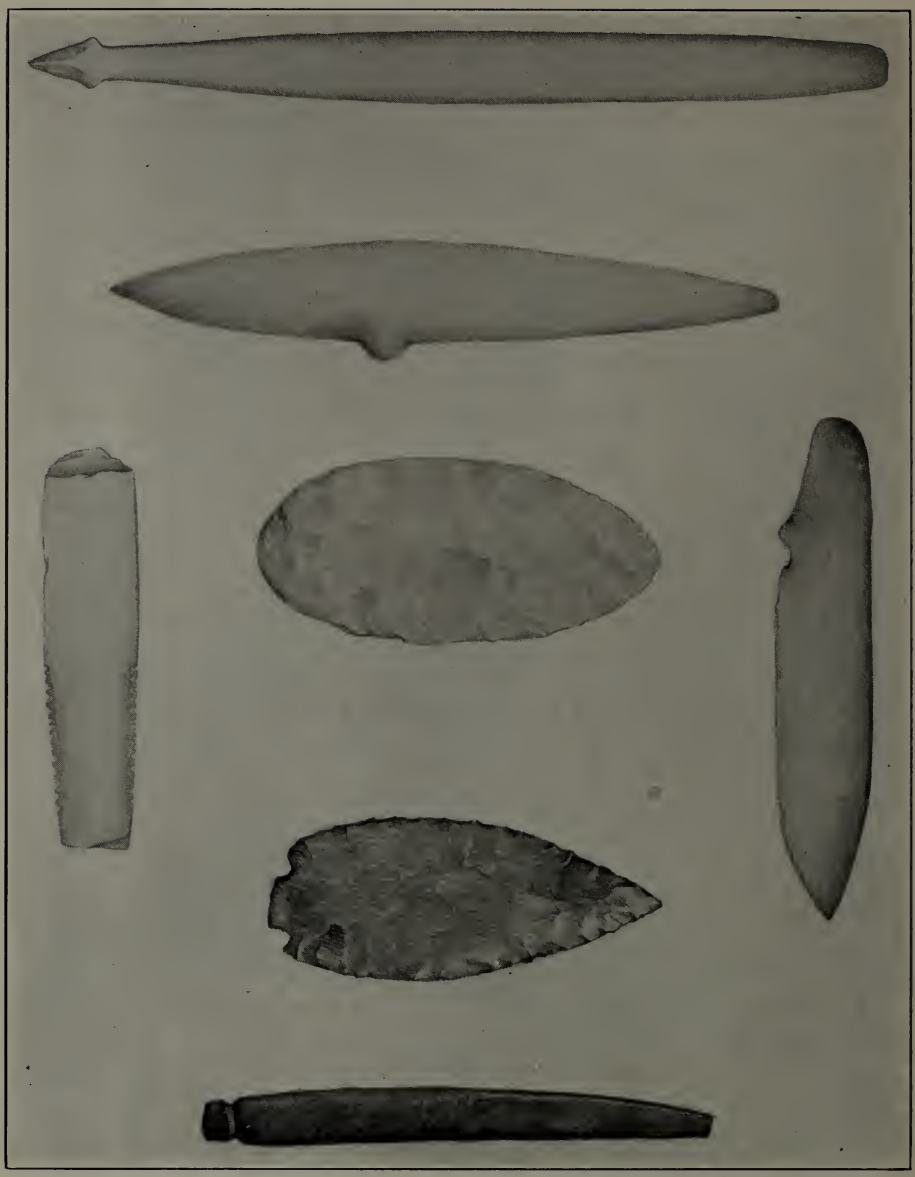


Fig. 25 Objects from Proctor collection. Sizes given on page 49 except of broken slate spear (4 inches) and pendant (6 inches). The larger adze (second from top) is nearly a foot in length.

ferred on page 47. We dug here rather extensively. Most of the original surface appears to have been removed in places, and elsewhere the city has filled in, to raise the level.

Between Franklin and The Weirs, where occurs the outlet of Winnepesaukee, there are several falls. These natural power sites have been made use of by mill owners, and dams are erected. The shore line on either side is exceedingly attractive, there are numbers of bungalows and cottages, and such towns as Laconia, Tilton, etc., occupy Indian sites. Field operations are rendered almost futile.

At Laconia there is a large collection in the library, concerning which we were unable to obtain accurate information except that it was found by Mr. E. P. Jewell between The Weirs and the Forks (Franklin). Outstanding in the collection are three or four large blades of gray chert-like stone not unlike some of the chipped objects from the Red Paint graves of Maine. Two of these have a suggestion of red ochre upon them. According to one account, they were dug out of sand knolls at The Weirs (see page 55). Another witness who, as a young boy, helped Mr. Jewell excavate claims they were found at the foot of Paugus Bay on a sand flat near the outlet, at which place numerous tools were taken by relic collectors long ago.

THE PROCTOR COLLECTION

Fortunately for archaeological investigators we have valuable data present in the large exhibit preserved by Miss Proctor.

The father of Messrs. John, Frank and Miss Mary A. Proctor* was much interested in Indian lore and began a collection of stone objects fifty years ago. His son, Frank, continued researches. This large collection is now owned jointly by Miss Proctor and her brother John, and it is exhibited in the upper story of her residence at Franklin. Mr. Richard Sulloway, as a boy, aided in field hunting.

The value of this exhibit lies in the fact that it is well recorded. We have for our study complete range of form and material of all stone tools and objects, both ground and chipped, all accumulated within a radius of fifteen miles of Franklin. Miss Proctor informs the writer that the bulk of the collection came from sites within the borders of the town, and not more than three miles from her home.

There are over 500 large tools. Sixty-three are grooved axes, indicating a rather higher percentage than is observed in the collections at Newburyport, Haverhill or Concord, Mass. Undoubtedly this quota is in excess of that exhibited in collections at Manchester, Salem, Cambridge, or Andover. A few of the prevailing forms are illustrated in Figure 26. Of the celts there

*Recently Miss Proctor published an interesting account entitled "The Indians of the Winnepesaukee and Pemigewasset Valleys." In this volume there is a description of many of her specimens.

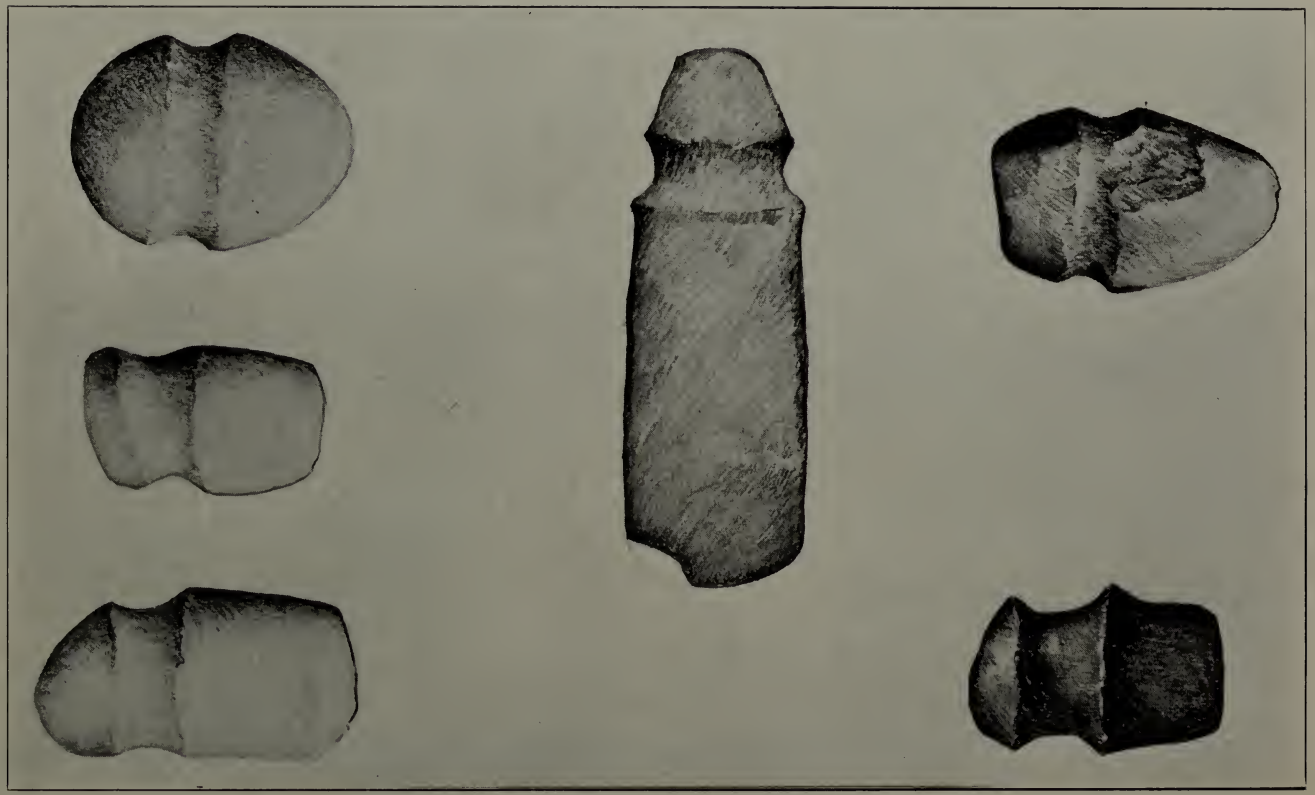


Fig. 26 Types of axes and hammer, Franklin, N. H. Proctor collection. S. 1-4.

are some twenty-five or thirty. It is curious there should be fewer celts than grooved axes.

When inspecting collections in Indiana some months ago the same peculiarity was observed—grooved axes exceeding celts. Of gouges we found 54, varying from small to large forms.

Most of these are average New England forms, not very deeply hollowed; yet we must do the Indians justice, for there are a dozen or more remarkable specimens of aboriginal work in the gouge class—sharp edges, sometimes almost bevelled, and well fashioned by careful and skillful workmen. The materials are porphyry, slate or granite. We observed but one gouge with a cutting edge at either end.

Numbers of Red Paint People gouges from Blue Hill and Orland, Maine, are wrought from a peculiar gray or bluish stone. The material is rather striking. We were interested, therefore, to note in Miss Proctor's collection several similar types of this same stone. Dr. Copeland (see page 74) has one or two from the Ossipees. We concluded that the evidence indicated presence of Red Paint People culture in the Winnepesaukee-Ossipee region.

It is somewhat difficult to separate adzes and celts. Both are distinctively cutting tools. The writer is quite prepared to agree with Mr. Willoughby in his contention that the larger and heavier tools were utilized in the manufacture of dugout canoes. Two or three have bumps, or protuberances, on the back and are worked to a graceful, sharp cutting edge. One suspects that some of these finer tools came from graves.

In Miss Proctor's collection are five or six complete semilunar or woman's knives. There are portions of six or seven others. The form is well known and need not be described. Most of them are made from slate, occasionally of shale.

Figure 27 illustrates a number of unusual pendants or charm stones. Undoubtedly many of them are strictly aboriginal, some, possibly, may have been engraved after contact with the Whites. Miss Proctor shows more in her interesting little volume, "The Indians of the Winnepesaukee and Pemigewasset Valleys." Nearly all were found on the large Indian village site located on what was called the Ox-Bow, now Odell Park. Here the river makes a horseshoe bend.

Undoubtedly, this Ox-Bow was the favorite residence spot. It is well protected. In Figure 38 we show remains of an old fish weir between a small island and Proctor Point, directly opposite Miss Proctor's residence. At low water this is plainly visible, even at the present time. Some of the stones have been removed.

These small engraved stones are very interesting. We observed quite a collection of them from a large site on Cape Cod near Provincetown. A few have been found in the vicinity of Concord, two or three at Newburyport, but they are more common in the Iroquois country, and particularly upon

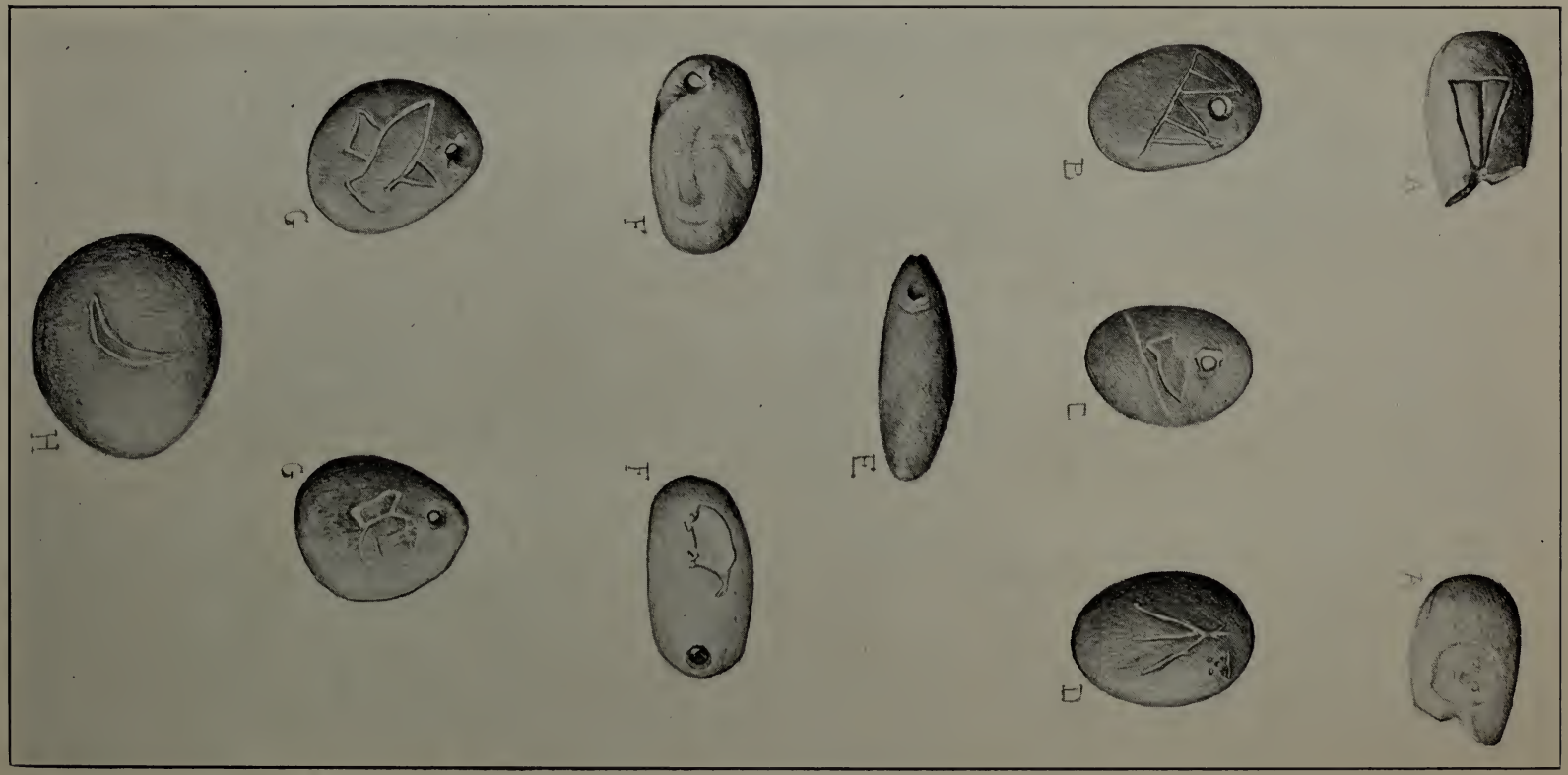


Fig. 27 Engraved stones, Franklin, N. H. Proctor collection. S. 1-2.

the Susquehanna. This does not imply any connection. The designs are rather crudely executed. All appear to be of Indian work. There are carved on these water-worn pebbles simple outlines of wigwams, human faces, crescents, and on one is a map of the Ox-Bow. This series also includes small ear-rings, or nose-rings (pendants) and numbers nearly fifty.

In the entire collection very few winged, or pennate forms, and tablets, or problematical forms, occur—not over three or four. There is one long grooved pendant shown in Figure 25. It is not unlike several from the Red Paint graves of Maine. In this same illustration appear two typical large blades, each about seven inches in length, one being notched, also two adzes. At the top is a pestle, twenty-six and a quarter inches in length. It is a remarkable specimen. There is an animal effigy head worked in bold relief at one end. The most interesting object, however, is the fragment of a large slate spear shown to the left in the figure. This is of distinct Red Paint People type and was found near Franklin.

In the collection are a number of heavily patinated leaf-shaped objects, almost turtle-back in form. They are not to be confused with rejects, and are much older in appearance than the other objects.

GENERAL OBSERVATIONS ON THE COLLECTION

Pipes are very scarce, there being but two broken ones in the exhibit.

Of the roller, or elongated, pestles (most of which are exceptionally well made) there are some twenty-five or twenty-six and probably fourteen or fifteen small mortars. The prevalence of these for use in grinding nuts, corn, pounding up of dried or jerked meat indicates permanent villages. That is, instead of entirely depending on hunting or fishing, these Indians were somewhat sedentary. One of the small pestles is nearly rounded at either end, slightly flattened and is about seven and one half inches long. It reminds one of a type common in California.

At Franklin, Laconia and The Weirs we were repeatedly told concerning the work by the late Mr. C. P. Wilcomb, who collected in that region for many years. He was present when most of the bungalows were erected and accumulated a great deal of material which is now in the Carnegie Museum, Pittsburgh. From what little we are able to ascertain, the collection closely parallels in character of artifacts the Proctor exhibit. At some future time we shall study the Wilcomb collection in detail.

Of projectile points, knives, scrapers and chipped tools there are a large number, and ten or twelve different materials are in evidence. There is some indication of foreign exchange—intrusion of distant material—probably fifty or sixty New York, New Jersey and Pennsylvania flint or chert materials are present.

Figure 35 presents the old mortar and surrounding land on Willow Hill. This was probably partly excavated by glacial action and later deep-

Fig. 28 Objects from The Weirs. Peabody Museum, Salem. S. 1-2. Below, part of a slate spear. To left, point of hexagonal spear. See page 55.

ened by Indian use. It is eighteen inches diameter, inside, and a foot deep. This has been preserved, most fortunately, through the efforts of the Franklin Woman's Club, at the suggesion of Miss Proctor. In several places they have moved these ancient mortars from their original sites to other places,—sometimes to a considerable distance. Down river, one mortar was hauled two miles and placed in the rear of a small school house. They should be left in situ.

Another very interesting relic of the past is to be preserved by the town of Franklin. It was found by Mr. Frank Proctor and Mr. F. A. Luce a few years ago. Apprehensive that vandals would injure it, they kept the discovery to themselves. Upon a boulder, about the size of a barrel, is carved the outline of a shad. Shad and salmon came up the Merrimack to the forks and then separated, the former going to Winnepesaukee to spawn and the salmon up the Pemigewasset. While the body and head are not very well executed, the Indian artist undoubtedly intended his effort to portray a shad rather than the more noble salmon.

WINNEPESAUKEE

We moved up river to the outlet and rented a commodious boathouse for our headquarters. This lake, in our opinion, marks one of the strategic centers in American archaeology. Further explorations may develop an Indian location of greater extent, but at present writing the settlement at The Weirs appears to have been the largest in all New England. Here apparently the Red Paint People of the State of Maine were in evidence. If this is correct, it marks the farthest migration westward of that unique and interesting culture.

The party devoted something more than four weeks to Winnepesaukee investigations. During that time we sunk over 1100 test pits, put down our eight-inch auger innumerable times, visited and inspected many of the islands.

As is generally known, the place takes its name from the very extensive fish traps maintained by the Indians at the outlet. Governor Endicott and his people heard of the importance of this center and visited the Indians. There are not wanting descriptions in our earliest records of fish taking at this spot, and doubtless many tons of dried fish were prepared by the Red Men for winter consumption. Some of the stones, which held in place the wooden weirs, may be observed even at the present time. It is sad to record that most of them were removed from their ancient resting place in order that a deeper channel might be utilized by speed boats. As there are more than forty miles of waterways available northwest of The Weirs bridge, and not much more than a mile below the bridge, it is not merely unfortunate but inexcusable that such vandalism should have occurred. Those ancient weirs deserved a better fate.

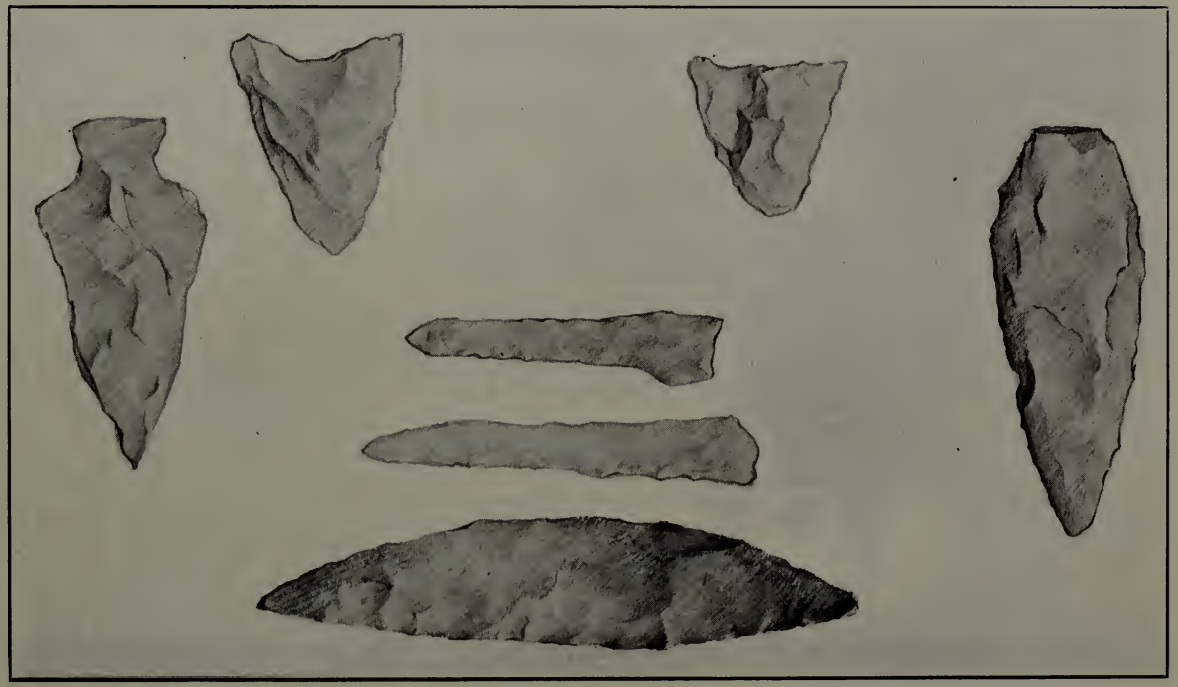


Fig. 29 Chipped objects from Governors Island, N. H. Collection of Peabody Museum, Salem, Mass. S. 1-2.

The village itself extended along the north bank flanking the stream for more than one-half mile. One hundred or more bungalows have been constructed the past fifty years beyond the railway station, and many objects of Indian manufacture recovered when excavations for houses were made.

Fig. 30 Gouge, chipped axe, and large quartzite knife from The Weirs. Peabody Museum Salem. S. 2-3.

Therefore, the total length of the village was in all probability nearly, if not quite, two-thirds of a mile. It is not supposed to have been entirely occupied at one time. Our excavations proved the existence of a great number of fire pits, some of which may have been storage pits, and wherever we excavated we found flint chips, broken objects, scrapers for fish scaling, etc. The land to the south rises abruptly from the river, and there was practical-

Fig. 31 Pitchwood rock, Stonedam Island, Winnepesaukee. About 10 feet diameter. Where Indians prepared pitch for their canoes.

ly no village on that side. Mr. Fred Moore, and other old residents, told us the land on the north side has been cultivated for many years, and during farming operations very large numbers of stone tools recovered. This was verified by the inspection of collections at Manchester, Concord, Franklin, Haverhill, Andover and the Peabody Museums in Salem and Cambridge. It is our opinion that no single site in New England has produced more material than this same Weirs village.

Mr. Fred Moore, long a resident, told us that when the cellar for his hotel was dug nearly forty years ago, workmen found a considerable quantity of red ochre, contained in a clay pot, and forty or fifty stone tools. The amount of the ochre is estimated from three to four quarts.

Mr. C. P. Wilcomb secured most of these objects from Mr. Moore's father, but a few unimportant ones were retained. After much search, Mr. Moore found in his attic an old box containing about fifty objects, mostly broken. We were interested to observe that these included the points of two hexagonal slate spears, two or three gouges on which were traces of ochre, and fragments of other tools practically the same in form as those constituting the Red Paint People Culture of the state of Maine. Mr. Moore presented the survey with these evidences of contact between Winnepesaukee and central Maine. [See Figures 28 and 33].

Just opposite the village and across the Narrows, when some bungalows were erected thirty years ago, forty or fifty graves, or deposits, were discovered. One or two older persons were present and we obtained from them descriptions which shed a little light. It is regrettable that no one made accurate observations. According to the accounts, these were graves, and some contained fragments of bones. The stone tools are of fine form and workmanship, and several of them may be seen in the library at Laconia. Mr. E. M. Floyd presented us with a tube of gray, highly polished material, almost of the same character as the Ohio fire clay utilized by the Mound-builders for some of their art forms in pipes. One end is broken. The remaining section is some nine inches in length. It is shown in Figure 34. It was found a short distance beyond Mr. Moore's hotel (northwest side) on a gentle slope. Test pits were sunk about the spot, but the other fragments could not be located, neither were there indications of additional deposits.

Finishing observations at the outlet, our survey established a base camp at Wolfeboro, and examined the lake region there and at Melvin Village where considerable pottery was found, more than at any other point on the lake. The fragments were small, several being well decorated. We have made no study of the ceramic art of the Merrimack Valley, but it is our opinion that the designs, or motifs, do not in all respects parallel the designs upon fragments found around Newburyport. There is opportunity for an interesting monograph upon pottery of the whole valley and particularly Winnepesaukee. Fragments should be collected from the Ossipees, Salmon Falls and Saco valleys. Considerable material is preserved

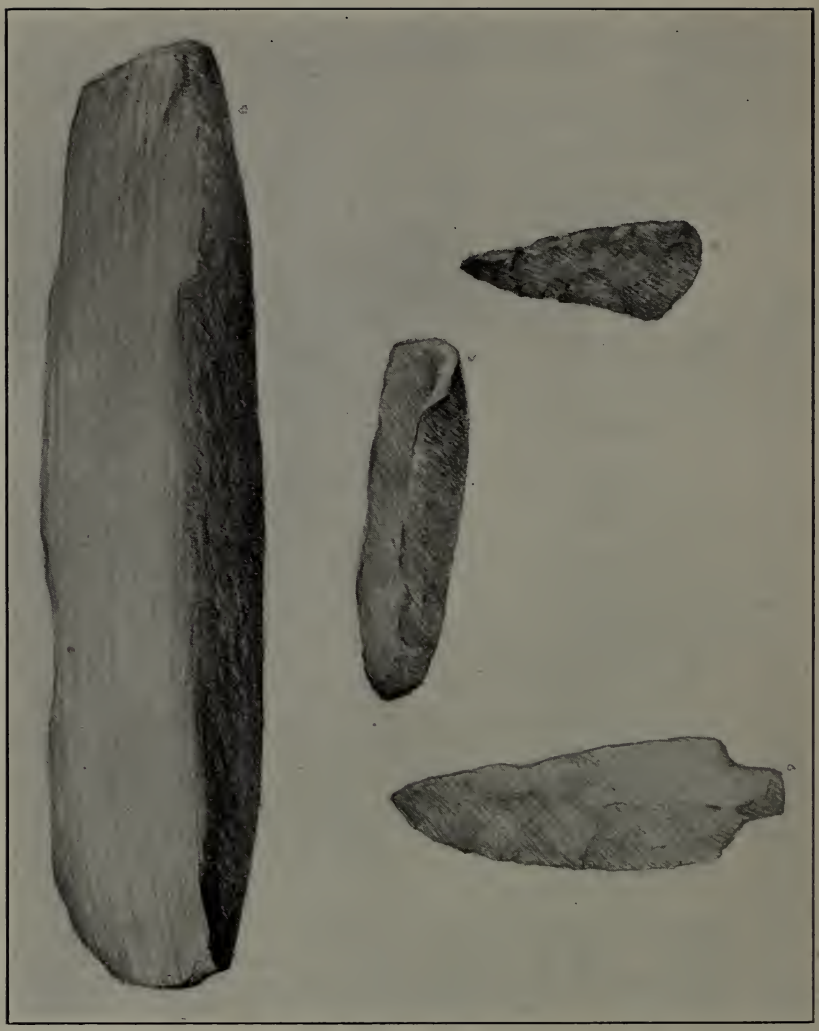


Fig. 32 Chipped objects and gouges, the former from Governors Island, N. H. Miss Sears' collection, Harvard, Mass. S. 1-2.

in collections. The difficulties are by no means insuperable and we suggest that the subject might be acceptable for a doctorate thesis.

Naturally we were much interested in the question of the intrusion of Red Paint People into the Winnepesaukee valley, and we examined all collections and possible sites in an endeavor to find other objects indicating their presence. We proceeded to the head of Winnepesaukee and found that near Moultonboro is rather a short carry through to Camp River which empties into Ossipee Lake. From here Indians could descend the Ossipee to the Saco, and would be a short distance from Sebago Lake—a favorite Indian resort. Speaking of travel by canoe reminds one of our contention that the Indians did not travel for any considerable distance above Plymouth. Hunting parties must have penetrated the White Mountains, but they went on foot, dried or smoked moose, bear, and deer meat, and carried such winter supplies down to the mouth of Baker River where they entered their canoes and proceeded down stream.

While we are of the opinion that Red Paint People came up the Saco and Ossipee rivers and carried over to the head of Winnepesaukee, they might have come up the Salmon Falls. While the journey is somewhat shorter, there is more rough water on the Salmon Falls than the Saco. These two routes are much shorter than the Merrimack. Indians were very fond of sea food, and in shell heaps we find not only clam, quahog, oyster, and scallop shells, but also many bones of seals and fish. The journey by water from the head of Salmon Falls to Portsmouth is approximately eighty miles. From Camp River, through Ossipee Lake and down the Saco to Saco Bay is about one hundred miles.

About Winnepesaukee itself were found indications of many sites. On Governors Island, in fine sand, we discovered a heavy deposit of ashes and burnt earth extending to a depth of four feet, and from this mass we secured some eighty knives, celts, drills, or hairpins, spear points and rejects. At several places on this island test pits revealed great quantities of chips and spalls, indicating workshop sites.

After careful consideration of all available data we are convinced that Winnepesaukee itself was more favorable to the Indians than Moosehead Lake in Maine. Moosehead enjoys a peculiar advantage since the great felsite quarry at Kineo was available, yet the journey to Winnepesaukee was more convenient and shorter, and there is more and better land available for the raising of corn and other food supplies.

The Winnepesaukee region holds the key to several of our New England Indian problems. While we are persuaded that the Red Paint People came in, there should be more careful and thorough work. It is recommended that some institution interested in research, notably Dartmouth College, undertake a thorough exploration of the Winnepesaukee sector during the coming summer. When we began our operations we did not realize the importance of this region, else we might have eliminated the territory between New-

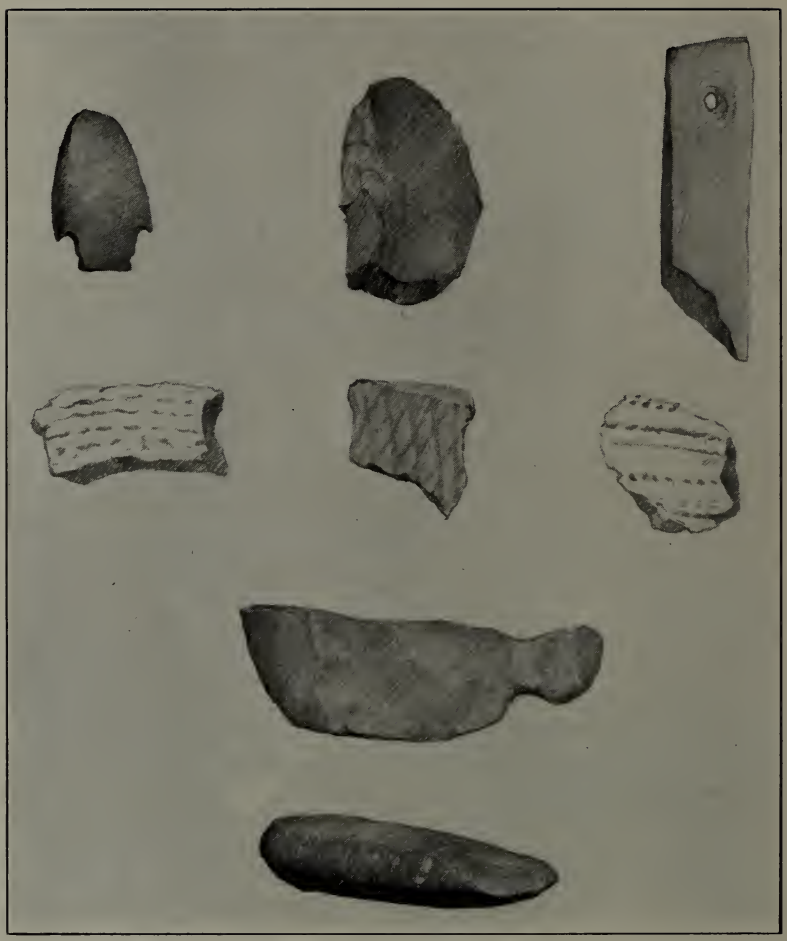


Fig. 33 Objects from The Weirs, N. H. Miss Sears' collection. Upper left and right objects are typical Red Paint People types of artifacts. S. 1-3.

buryport and Concord, Mass., leaving that for Messrs. Smith and Luce. In that event we would have concentrated a longer period at Winnepesaukee. Governors Island, to say nothing of other sites, merits at least a month's careful excavation. Unfortunately, there are no available funds, otherwise we would recommend completion of observations begun at Winnepesaukee. Certainly facts, of value to students of early Indian history, are attainable and we urge consideration of the above suggestion.

Fig. 34 The tubular pipe, ornament and specialized chipped object from The Weirs, N. H. Peabody Museum, Salem. S. 1-2.

AMOSKEAG (MANCHESTER)

On completion of our work here, the men proceeded down river to Nashua from whence, in September, canoes and camp outfit were shipped to Maine, the party somewhat reduced in numbers, and for the remaining two weeks we travelled by automobile.

As had been previously intimated, the Merrimack basin is an extensive area and it is impossible to cover it in satisfactory detail during a season of

Fig. 35 The large mortar at Franklin, N. H.

five months and a half. Between Franklin and Nashua our efforts were confined to recording the sites and testing here and there.

There are several large streams coming in from the West, notably the Contoocook and Black Water, which we did not have time to explore although several local collections are in the possession of citizens in that region. The Suncook Valley is also rich in archaeological remains.

Manchester, New Hampshire, formerly called Amoskeag, was a populous center in Indian times. One must regret that circumstances prevented full inspection of this interesting and important site. Amoskeag has been

Fig. 36 The salmon pool near Ashland, N. H. The upstream section of the right-hand rock is polished. See page 43.

mentioned by early writers. Reverend John Eliot is supposed to have visited the encampment, although the records are vague.

The late Mr. Francis B. Manning, formerly a student at Andover, and who accompanied us on several expeditions in Maine and Canada, made a study of the Manchester sector. Dr. Harry L. Watson has lived at Manchester for many years, has carefully observed the various sites and collected some hundreds of stone objects. The Manchester Institute has a large and extensive collection found in the region, and Dr. C. S. Copeland of Rochester has also secured much material from both Manchester and the region between Franklin and Wolfeboro. Several days were spent at Manchester but the work was unsatisfactory because most surface specimens have been picked up. The city itself covers the major portion of old Indian ground, and the falls and surrounding banks are totally changed by dams

and mill buildings. A number of skeletons were discovered on the west side of the river opposite Mrs. Frederick Smyth's estate. Although industrious efforts were put forth, our party was unable to discover additional burials. Mrs. Smyth's residence and gardens are situated opposite Amoskeag Falls. It is a beautiful location some 70 or 80 feet above water level. The owner was much interested in our work and permitted us to sink seventeen pits in her lawn, flower beds and walks. We discovered disturbed earth extending to a depth of four or five feet and fragments of two skeletons, several broken tools, a number of arrowpoints and fish scrapers. Were it possible to extend a large trench through her property, doubtless some important discoveries would result.

The writer has asked Dr. Watson to add to our comments and the information presented in the following pages is from his pen.

"This sector, known in early days as Namaoskeag, is much more extensive than generally supposed. Due to the fact that so many artifacts have been found in the immediate vicinity of the falls proper, other lesser sites have been neglected.

"In ancient times the principal village occupied both banks of the Merrimack extending north and south one quarter to one half mile along the river proper, and one quarter to one half mile back on the high land, or bluffs, bordering the falls. The writer has been able to locate collections, totaling about 10,000 objects found in this sector, and a great many more are known to have been found here. It has been said that when the foundation and grading was placed for the Jefferson Mill that it would have paid the laborers better to have gathered the Indian relics that were buried around this building than to have continued their work on the mill.

"The north island was, until its destruction, very rich in artifacts, especially knives and war points in jasper. The writer carried on extensive explorations there for some years uncovering several fire pits containing a large amount of broken pottery, with well defined decorations, several yellow and red jasper war points of exceptional workmanship, two very fine knives, one in yellow jasper and one in chert, also a flat perforated ornament showing that it had once been broken, refinished on broken edges, redrilled, and several fragments of steatite dishes.

"The south, or larger island, has recently been covered with several feet of ashes.

"The western section of the river tumbled down a very narrow gorge into a great basin known as the eddy, bounded on the east by the north island and on the west by a low lying shore. Both mainland and island afforded a sandy beach for canoes and in early times the narrow outlet of this eddy was obstructed by a weir built by the Indians. A short distance back from the western shore of the eddy a bluff rises some seventy-five or eighty

feet and extends back in a plain some distance to the shores of the Piscataquog River. Both the eddy basin and bluff above have produced hundreds of stone objects and are still considered likely hunting ground. This bluff is on the opposite side of the river from the site on the Mrs. Frederick Smyth estate explored by Dr. Moorehead's party.

"Much of the old village site at and around the falls proper has either been built upon or carried away for grading. Several lesser sites have been discovered in past years as the city has enlarged. On high land about one mile east of the falls, and extending two or three miles in a southeasterly direction, several small sites were uncovered and from them many very fine objects were taken, several of which are in the writer's collection.

"Several lesser sites have been uncovered on both banks of the Merrimack from the falls proper south to the mouth of the Great Cohas Brook at Goffs Falls, a distance of four miles, especially at the mouth of the Piscataquog river, and Short Falls on the Merrimack near the Woodbury estate. The west bank of the river at Short Falls is still very much as it was in Indian days, a cleft in the bank is still pointed out as the place where the Indians took their canoes from the water to carry them around the falls.

"The Great Cohas Brook in places very deep and very sluggish, and in others offering some very fine rips for the taking of fish, extends from Massabesic Lake to the Merrimack at Goffs Falls, a distance of four miles. Along this brook, and also on the shores of Massabesic Lake, are several extensive village sites from which the author has taken several hundred objects, mostly bird points, some broken steatite vessels, one entire, fragments of pottery and hundreds of broken points and discards. Earlier explorers procured some very fine steatite dishes, one steatite pipe and a large number of pestles, axes, gouges, etc. One of these sites was formerly noted as a roosting place for wild pigeons.

"The Griffin collection at Auburn, N. H. came from the several sites on Massabesic lake. The Manchester Historical Society collection contains several objects from the Cohas sites, including probably one of the finest steatite bowls in existence in New England.

"Very few burials have been found on any of the sites in or near Amoskeag, perhaps twenty in all, without authentic records in most cases.

"Several caches have been discovered at various times. The writer helped unearth one on a Cohas Brook site of thirty-five leaf shaped objects each about two inches in length and very similar, made of a rather soft brown stone, workmanship very poor. Also have forty-five pieces like above from a cache of sixty-five from site on west bluff of Merrimack at the Amoskeag Falls proper, workmanship almost identical with first cache. Also report two other caches, one from Ray Brook on east bank of Merrimack just north of Amoskeag Falls and one from Auburn, N. H. that are identical in material and construction, leaf shaped knives about four inches long, two and one half inches at widest point and made of felsite.

"Potter's History of Manchester states that, 'the fish (alewives, eels, shad, and salmon) usually arrived at Namaoskeag about the 20th of May,' and that, 'owing to the peculiar natural formation of islands, eddies, ledges and narrow channels, the Namoaskeag (Amoskeag) Falls were the most desirable fishing place upon the Merrimack.' Potter also states that Amoskeag was the residence of the great Sagamons of the Pennacook nation. Passaconway, the greatest of the known Sagamons of the Pennacooks resided at Namaoskeag a greater part of his active life. Unfortunately the Amoskeag site having been thoroughly mutilated by the hand of progress can never be accurately explored."

Fig. 37 Grooved axe, Franklin, N. H. Miss Sears' collection. S. 1-2.

DR. HARRY L. WATSON COLLECTION

In all his 1700 or 1800 objects he has but three or four gun flints. Since guns were in use among the Indians for two centuries this affords us a good line of comparison. In all the exhibits throughout the Merrimack Valley there are very few gun flints. I should say there is about one gun flint to 3,000 other chipped objects. Most of the collections have none. Dr. Watson had placed on a card different materials utilized by the Indians in the manufacture of chipped objects. There are some 16 of these ranging from Kineo felsite to Ohio-Pennsylvania-New York materials. Naturally the local stones predominate. His large collection was accumulated in the immediate vicinity or within Manchester and much of it from Amoskeag Falls, the center of Manchester. The average workmanship here, as in the case of Franklin, is higher than elsewhere on the river, and there seems to be much more pottery.

CHIPPED OBJECTS PREDOMINATE IN THIS AS IN ALL OTHER MERRIMACK EXHIBITS

There are about 130 triangular or warpoints, 13 complete drills or perforators, and 25 broken ones, but few scrapers—not over 12 or 15. There are some knives with secondary chipping which would serve as scrapers. Several of his larger and more important knives and lanceheads are shown in Figs. 42-43. Here obtains more of the large hunting arrows than are apparent in the Haverhill collection, yet the majority of chipped objects are small, as one would expect. But two or three serrated points occur.

In Indian times the famous island seems to have been a favorite resort. There were rocky channels on either side where salmon could easily be taken. Power plants and dams have virtually destroyed the island, yet years ago many interesting specimens were found. There is a surprising number of red jasper objects, also granite gouges, celts and adze blades, etc., from that spot. It is stated that when a dredge was at work some years ago more than 30 stone tools were brought up from the bed of the river.

There are a few ornaments of slate, one very remarkable lunate form which is shown in Fig. 11. Dr. Watson found this himself when he was a boy of 15 in a sand bank opposite the falls. There is a large roughly blocked out pennate form composed of mica schist.

New England Indians seldom employed the hollow reed drill for perforating stones. In the ornaments shown in Fig. 44 in the one to the right is observed a core extending upwards one quarter of an inch.

Quartz crystal seems to have been used to a considerable extent. There are quite a number of fragments and several complete points.

In his collection is a small dish of steatite, about 4½ inches diameter, shaped somewhat like a saucer, and one or two slender perforated pendants, but none of the small earrings, or nose rings, engraved with faces or designs, such as are in Miss Proctor's collection.

Dr. Watson reports many hammerstones and very few grooved hammers or grooved sinkers. He has seven rough axes and about twelve broken ones, but one of them flat backed and all rounded at poll save one; ten celts and nineteen gouges, several of which are rather fine, but high specialization is not much in evidence. There are four or five of the adze-gouge type, rather thick. We present in Fig. 42 a very fine gouge with slightly curved cutting edge. Dr. Watson has found seventeen plummets, of which two are rather large. One of these is a rough effigy with eyes and mouth crudely worked on one end. His largest adze blade is rather thin, slightly hollowed and 12½ inches in length. He also possesses a gouge with two slight projections at the top, whether a crude attempt at effigy is problematical, although the elevations are probably for fastening to the handle. He has fifteen pestles of average size and on one end of his best specimen the Indian has carved an effigy head.

Fig. 38 Remains of fish weir, Proctor Point, Franklin, N. H.

GRIFFIN, N. H. FREE LIBRARY COLLECTION

In this village some five miles from Manchester, there is a small library containing a sizeable Indian collection of objects found in the immediate neighborhood. A fair sized stream passes the front of the building and empties into Massabesic Lake not far distant. There are two fragments and

Fig. 39 Problematical forms, Dr. Copeland's collection. S. 1-2.

one complete semilunar or woman's knife, a rather interesting grooved axe with very short blade. There are several hundred flint objects and in a large case one finds 253 stone artifacts of various kinds exhibited, of which 22 are roller pestles. There is an elongated plummet about 10 or 11 inches in length, narrow neck, large grooved and instead of being

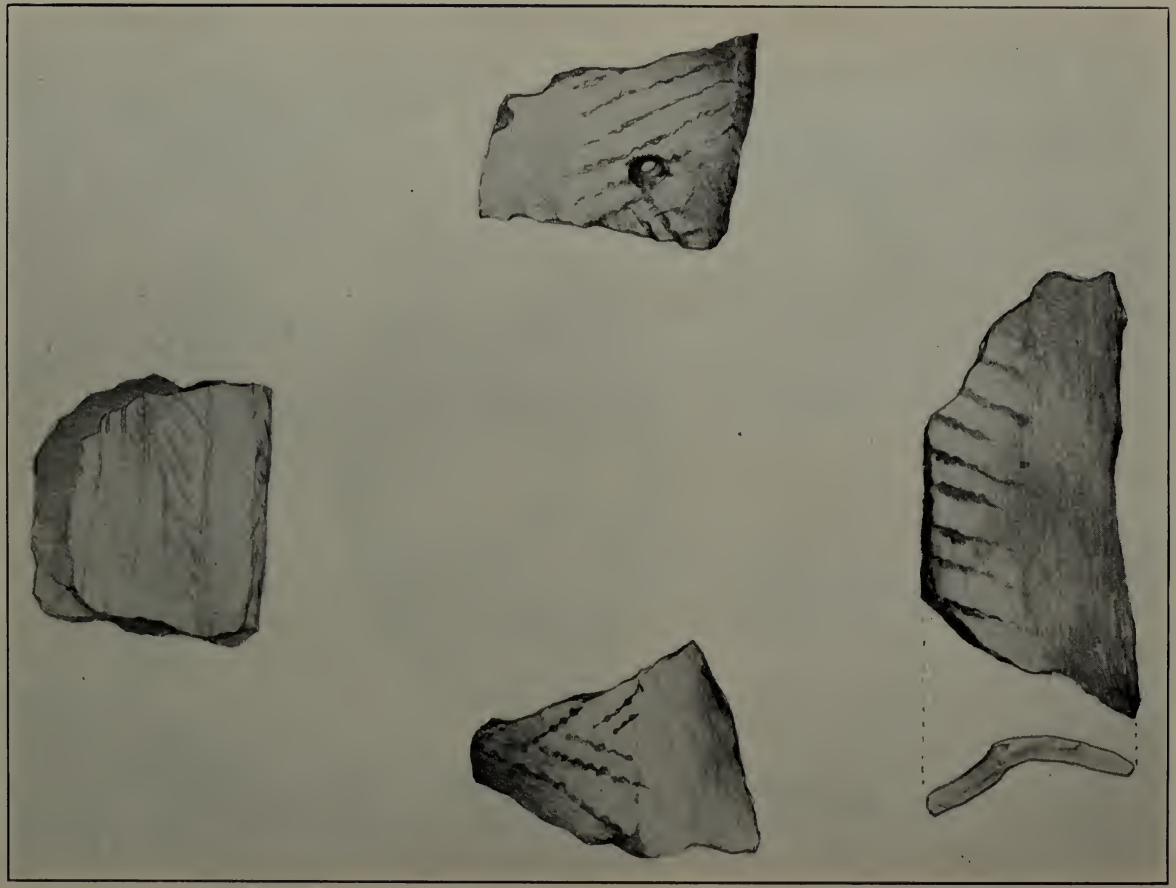


Fig. 40 Pottery fragments, Melvin Village, N. H. S. 1-2.

pear shaped the specimen is remarkably convex at the lower end. There are 20 plummets and 10 of the round and egg shaped grooved stones, two or three problematical forms, one of which is pick shape, broken through the center, and two thin crescents or lunate forms. A turtle effigy is carved on a large piece of soapstone. The collection contains two boxes filled with fragments of pottery, much of which is decorated and two rather shallow clay dishes. The lady in charge did not know where these were found. They are rather plain, of form common in Missouri or Arkansas, and not decorated. She is of the opinion they were discovered in an Indian site near the lake many years ago. So far the investigation has resulted in no satisfactory data as to location. We note very few drills or perforators, but a number of slender, long notched spear or lance heads, probably fish spears. are in evidence.

MANCHESTER INSTITUTE OF ART AND SCIENCE

A large amount of pottery has been found about Amoskeag Falls, indicating a permanent village. There are several ornaments in this collection, some of them highly decorated. There is a large, very fine gouge thirteen inches in length, grooved the entire length, also a squared adze blade, all four sides being almost straight. It is about two inches diameter. We saw two heavy adzes of the usual type, five axes, four celts, seven gouges, two roller pestles, six plummets, twelve rather large knives and nine knives varying three to five inches, from Amoskeag Falls: nineteen war points from the island in Amoskeag Falls. Dr. Watson says this is not all the collection but on the contrary there are 600 or 700 more things stored.

COLLECTION OF THE HISTORICAL ASSOCIATION, MANCHESTER, N. H.

A portion of this collection is stored, but of those on exhibition we observed eighteen roller pestles, a flat ornament of red slate, sixteen grooved axes and a notched axe—somewhat like the Arkansas form. All these axes, save one, have the groove extending entirely around. Also five adzes, chiefly of the heavy type with slight protuberances as in Fig. 25, and one gouge with wide hollow which is grooved across the top—rather unusual—and eight ordinary gouges. On exhibition are two small portable mortars, a large plummet weighing five or six lbs. and six smaller plummets. There is a fairly well made platform pipe which came from Amoskeag Falls, as did most of the collection.

Two semilunar, or woman's knives, 20 large knives and 20 oval blades about five inches in length were found in a cache. There are some 150 ordinary chipped projectile points, of white quartz, and about 150 smaller arrowpoints, all of which were found in the sand plains south of Manchester.

The society possesses an effigy soapstone dish, one of the finest specimens ever found in New England. It is worked out rather thin and the ears, or handles, appear to be effigies of some description. Considerable pottery and steatite fragments have been preserved. There are about ten celts in the collection, and several broken ornamental stones.

INDIANS IN OUR COLONIAL RECORDS

It is somewhat aggravating that the Reverend John Eliot and other early visitors to Indian villages in New England gave us in their narratives

Fig. 41 Sudbury River at Concord, Mass.

so little of real value to archaeologists. These men observed our natives emerging from the Stone Age and could have told us something specific concerning the hafting of tools, the use to which various adzes, gouges, chipped knives, and other objects were put. Most of our observers wrote at length with reference to councils, conversion of Indians, expeditions, wars, relations between Indians and Whites, etc. Now and then there is a little concerning wooden objects, costumes, and textiles, yet when all is said and done there is very little of real value to the student of artifacts.

Of all the sites in Merrimack Valley visited by our survey, the best account is that presented by Mr. W. E. Moore in "Contributions to the History of Derryfield, New Hampshire," Manchester, 1896-97, from which we quote at length:—

"The Nipmucks—neither numerous nor warlike, they took no part in French and Indian wars. The tribe with which we are more immediately concerned was subject to the Pennacooks; and the headquarters of that tribe, generally made at Pennacook, were sometimes transferred to Amoskeag, probably in the height of the fishing season, and in virtue of the right of the stronger.

"From evidence which appears conclusive we locate the headquarters

Fig. 42 Broken knife found on a farm in Bedford, N. H., Goffs Falls. Specialized gouge from village site on west bluff of Merrimack, Amoskeag Falls, Manchester, N.H. Dr. Harry L. Watson collection. S. 2-3.

of the Nipmucks at or near Amoskeag Falls, a place famous for hunting and fishing. The chief village, or more accurately the village of the chief, was situated on the hill-bluff known as the "Willows", now owned by Ex-Governor Frederick Smyth. In the steep banks of this bluff, and when the soil had been upturned, there was found a great number of broken fragments of rude pottery and other utensils used by the Indians. Nearly everything naturally grouped under the head of Indian relics has been

found on the site of this village, including arrow and spearheads in great variety, stone mortars and pestles, stone axes, gouges, clubs, and fish-knives, stone tools for removing fish scales or scraping skins, bone fishhooks, needles, hairpins, and numerous other relics. When making an excavation on the premises for the purpose of forming a small artificial pond, there was unearthed a deposit of arrow and spearheads, knives, etc., of quartz, flint or chert, which with unfinished specimens and chipped fragments amounted in the whole to several bushels. This was probably one of the workshops or armories of the tribe, and undoubtedly the first Amoskeag manufactory. Over the whole section surrounding the falls, on either side, in fact from

Fig. 43 Objects from Dr. Harry L. Watson's collection. Manchester, N. H. S. 1-2.

Goffs Falls to Martins Ferry, a great number of the various relics above enumerated have been picked up, several valuable collections having been made, perhaps the most interesting being that of the late Samuel B. Kidder. They were more numerous upon the village site referred to, on the elevation west of the P. C. Cheney Company's mills, as well as elsewhere and nearby, on the large island below the falls and the level stretch of land immediately below the great eddy. At all these points, as well as in the bed of the river, valuable finds have rewarded the patient relic hunter. At the mouth of Christian brook, known also in later times as the 'fair-ground brook'; and also at the mouth of Ray brook, there have been found many interesting relics. The bank of the river north of the latter stream is quite steep, and here about twenty years ago the writer found a nest of a dozen or more large chipped slate stones. They were buried at a considerable depth, having

been uncovered by a fall of earth occurring because of high water. There are signs of old fires, pieces of charred wood remaining at a depth of three or more feet. Throughout this entire section similar mementoes have been found, especially on the sandy margins of lakes and ponds. A symmetrically chipped arrowhead of quartz was found by the writer, when a mere boy, on the beach at Massabesic Lake.

"The foregoing facts establish the presence of Indians. Tradition assigns no spot which we can point out as an Indian burial place. It is said there are several Indian graves near the entrance from the highway to the Devil's Den in Chester. It is also said and has long been currently believed that the site of a number of wigwams was upon Brown's Island in the Massabesic, and this is altogether likely. The sole indication of a burial place in this immediate vicinity which has come to our knowledge was the finding of

Fig. 44 Specimen with core left by reed drill, Dr. Watson's collection. S. 1-3.

human bones supposed to be those of Indians, in the grading of Pennacook Street, about 1875.

"The only approach to a permanent settlement was that around the home of the chief. More than forty wigwams were scattered over this picturesque knoll, a fine view of the Merrimack being afforded from the willow palisades surrounding the village. It is quite certain numerous temporary wigwams were erected at or near the important points above mentioned, on both sides of the Merrimack, some of which may have been permanent."

DR. C. S. COPELAND'S COLLECTION, ROCHESTER, N. H.

Dr. Copeland's exhibit contains, all told, something over 2,000 objects. It was not thought necessary to obtain exact percentages for this preliminary report. He has collected from the upper portions of Salmon Falls and Ossipee Rivers, but a large portion of his collection came from Merrimack drainage, and particularly the Winnepesaukee region.

He possesses quite a number of axes found elsewhere than in New England. Illustrating these, there are 41 in his collection, the largest of which is about a foot in length, rounded poll, which is slightly pointed.

The groove is narrow. In the exhibit is a large, rather broad axe made from a thin, black pebble. This axe has been much used. The groove is rather shallow, and the specimen about ten inches in length.

Dr. Copeland's series ranges from tomahawk forms, which predominate, to two or three large axes of six or eight pounds weight each. In all the specimens one observes that the groove extends entirely around, and only two or three have flattened polls.

Eliminating grooved axes from elsewhere in New England, there are some 41 in the collection, the largest of which is about one foot in length, with rounded poll, slightly pointed and narrow groove. He possesses a large, broad, rather thin axe, of flat stone, much used, and it appears very old. It is ten inches in length. The axes range from small tomahawk forms to two or three large ones, six to eight pounds. All have the groove extending entirely around, and only two or three have flat or straight polls.

Of gouges there are 35, corresponding with types in the Proctor, Watson and other collections of the region. A few were short with deep grooves, such as the central object in Fig. 32.

Most interesting in the collection are two or three rather long, slender gouges of a gray stone much favored by the Red Paint People. These were found in the upper Salmon Falls region, or the Ossipees. The adze blades total fourteen, and as usual, they range from rather thin, slightly ridged ones to thick tools used for heavy work on trees.

In Dr. Copeland's extensive collecting he was able to secure seven or eight various ornamental stones or problematical forms, one of which is especially interesting. It is a pennate form, five and one-half inches in length, two inches in width, and has been carved from yellow material. It is thin, exceedingly well drilled, and of exactly the form and substance of New Jersey types, probably brought in through aboriginal trade. The other ornamental stones are of the same type occurring elsewhere.

He has three semilunar knives of the regular type.

Of plummets, there are about seventeen, two of which are large.

There are 35 celts varying from small to several of superior workmanship eight or nine inches in length.

In the chipped objects, knives, arrow and spear points, etc., there are several very large and fine ones, notably a knife 7½ inches in length, found at Milton, N. H. It is heavily weathered. The percentage of triangular, or war points, is less than at Manchester, Franklin, or Concord, Mass.

There is a little fragnentary pottery in the collection, and he informs me that very few pipes are found. He has but one.

MINIATURE PROBLEMATICAL FORMS

Mr. Levi Edwards, when trout fishing with a friend along Beaver Brook, Alton, N. H., found a black mass in the edge of the stream. It lay

upon a gray, clay bed and the contrast attracted his attention. He claims that he took from this substance, which appeared more or less sticky, some seventeen small, highly polished problematical forms. Last summer the writer talked at length with Mr. Edwards who maintained that these objects were found in what appeared to be the remains of disintegrated skins. His companion walked back and saw him find the remaining five or six objects. Dr. Copeland secured the collection, and we have reproduced fifteen of the objects in Fig. 39. Nothing precisely of this nature has been discovered in New England, and naturally some questioned the genuineness of the objects. It is not for us to engage in special pleading. Edwards' story appears to be frank. The objects may have constituted a shaman's outfit. Apparently commercial gain does not enter into the question since the objects are of rather hard stone, some of them of quartzite, and Mr. Edwards received a very small sum from Dr. Copeland. They could not be used as tools, and the find must remain somewhat of a mystery.

THE BEVERLY FARMS COLLECTION

Many years ago Mr. Franklin Haven, a banker, established an estate at Beverly Farms, Mass. He was very intimate with Daniel Webster who frequently visited him. The site was formerly an Indian encampment. A gentle slope extends to a long sand beach, and there is a small creek toward the west. Commencing more than sixty years ago the family has very carefully preserved all archaeological objects found upon their property. Up to the present writing more than 3,000 stone objects have been discovered. These are now in our Andover collection and in a special exhibit.

Mr. Haven's grandson, Franklin Haven Ross, from early boyhood up to the time of his death some years ago, continued to add to the finds. His mother, Mrs. Ross, and his aunt, Miss Haven, have since secured several hundred more objects. Properly, this site does not belong in the Merrimack, yet since it is within about ten miles of the end of Plum Island and the artifacts bear a striking resemblance and are pretty much the same material as those from the mouth of the Merrimack, we have thought best to add a brief description.

So far as the writer can ascertain, there is no other complete collection of size from one site in all of New England and therefore the finds made on the Haven Ross estate at Beverly Farms are important. They give us complete range in form, type and material in use at a long inhabited village. Many of the projectile points, knives, etc. are chipped from porphyritic felsite. There is also in evidence a reddish quartzite which appears to have come from a quarry in the vicinity of Wakefield. Of the entire collection probably 95 per cent is constituted of chipped objects, rather crudely made. This is due to the substance rather than faulty workmanship, since Marblehead material predominates. Next in importance is

quartz and also quartzite. A few projectile points of New York or New Jersey stone are in evidence but aboriginal trade does not appear to be extensive.

Although a few skeletons were found from time to time in ridges back of the estate, or a short distance up and down the coast, none were discovered by employees during intensive garden operations on the Haven Ross estate. Some years ago the writer dug several test pits in the lawn and garden, also along the ocean front but was unable to find heavy ash pits or deposits. There is a disturbed area extending down about a foot and in the ground are numerous chips, spalls, fragments of burnt stone or other village debris. Very little pottery has ever been found at this place. Considering the size of the camp, the absence of ceramic art is rather surprising. At some future time a long trench should be extended through the property in order that more detailed study may be made. Miss Haven and Mrs. Ross have lived on the estate since girlhood, were very kind at various times in permitting researches, and it is due to their interest that this complete collection is today preserved.

GENERAL CONCLUSIONS

Our expedition covered a territory 150 miles in extent north and south. Including tributary streams, lakes and rivers, brooks, etc., the various members must have examined, approximately, 1500 miles of shore line. Obviously it was impossible to concentrate long at any one point. In view of our chief difficulty—the thickly settled country, the results of our labor are satisfactory. Before mentioning these, two or three suggestions might be offered. Were it possible to secure sufficient funds, it would be well to place a competent observer at Manchester, another between Manchester and Concord, and a third at Winnepesaukee. Each of these men, during the entire summer, would employ local labor and carry out intensive examination of the territory within a radius of fifteen miles of his headquarters. By this means we would be enabled to reconstruct completely the arts of our predecessors in the Merrimack. Particularly should one emphasize the Winnepesaukee sector. It is one of the most important in the whole of New England.

The conclusion is forced upon us that Merrimack Valley aborigines did not practice, to any extent, burial in the ground. They probably placed their deceased friends in small pens, or cribs, on the surface after the manner the Ojibwa, the Eskimo, and other tribes. All available information, either through the printed page or by word of mouth, is to the effect that not over 50 skeletons of Indians have been found in the entire valley. Several historians have stated that there were probably 30,000 Indians living in the Merrimack valley just before the smallpox epidemic, or prior to 1620. Even if half that number resided in villages between Newburyport and Plymouth,

and burials in earth were a tribal custom, hundreds of remains would be found. Upon page 79 we have indicated that 13,000 test pits were sunk. This does not include the prodigious number of auger tests. These are eight inches in diameter and penetrate to a depth of nearly four feet in free soil. On tracts where loam or light soil predominated, two augers were used. Yet, as stated, but four decayed skeletons were found during the entire season.

The smoking custom was not prevalent in prehistoric times. In all the collections, public and private, totalling, possibly, 80,000 objects there are less than 40 pipes, including fragments. Some of these appear to have been brought in from the Hudson Valley.

Pottery is frequently found, yet there are many sites where little or no pottery occurs. Now and then in the case of well established villages such as Manchester, Newburyport, and The Weirs, it is in considerable evidence, and all available fragments merit careful study. Taken in their entirety, the art concepts are rather low. With few exceptions, no good portrayals of animal or human life occur in stone, and none in clay. What these people possessed in the way of wooden utensils or effigies, we do not know.

As to aboriginal barter or exchange, it was not extensive. Although some Pennsylvania, New Jersey, New York, or Ohio flint were brought into The Weirs, Amoskeag, the Shattuck site, or Amesbury, there is no indication of much contact between our tribes and those to the West. In all the collections there do not appear over six or seven pieces of aboriginal copper. Florida shells, so prized in Ohio, New York State, and even Wisconsin, have never been found.

We have referred to the presence of the Red Paint People at Franklin, The Weirs, and in the Ossipees, There is the suggestion of an earlier culture since some very heavily patinated and crude objects have been occasionally found. This, however, is rather indefinite and no direct claim can be made.

Fig. 34 illustrates a long tubular pipe found at The Weirs. Similar ones were secured in the Swanton graves, Lake Champlain, many years ago by Professor George H. Perkins.

At Holyoke, William J. Howes, Esq., showed the writer two long tubular pipes of the same character as the one we have illustrated. These occurred in gravel alongside a decayed skeleton. There was also a quantity of beads of native copper ranging from a quarter to half an inch in diameter. Some workmen engaged in hauling sand found two or more tubes which Mr. Howes is endeavoring to secure for preservation in the Holyoke library. Farther down the Connecticut near Hartford four or five shorter ones have been found and are in the State Historical Society collection and also the exhibit of Mr. Norris Bull. Our surveys in the state of Maine discovered two about five inches in length at Masons Cemetery, Orland. In the larger museums are a total of five or six from various parts of New England.

The presence of long tubular pipes in the Merrimack Valley is quite interesting. Apparently these cylinders and their accompanying objects are in no sense of the Red Paint People Culture, neither do they appear to be Iroquoian. The range of tubular pipes is from central Maine through to the Ohio country and Lake Champlain to southern Connecticut. They should all be tabulated and circumstances connected with their discovery recorded.

Persistent and continued research, particularly in the Winnepesaukee region, would doubtless result in accumulation of important facts of value to archaeologists. That the Algonkins found by our ancestors in this valley were the original inhabitants has been generally believed. However, the writer is of the opinion that we have a pre-Algonkin culture in our Red Paint People, and probably another tribe.

FINANCIAL STATEMENT

Receipts

Peabody Museum, Salem, Mass.		$2,000.00	
Smithsonian Institution, Washington, D. C.		1,000.00	
Trustees, Phillips Academy		2,900.00	
Society for Preservation of New England Antiquities		173.64	
New Hampshire Historical Society		200.00	
A Friend		1,950.00	
Contributions by 59 persons		1,302.00	
Total Contributions		$9,525.64	
Received from sale of outfit		94.20	
			$9,619.84

Disbursements

Amounts vouchered for—			
Transportation	$ 418.24		
Camp equipment	627.06		
Meals and rooms for party outside camp	888.09		
Wages	4923.72		
Cost of car and upkeep	671.06		
Food supplies (camp)	1072.32		
Miscellaneous (destruction of crops, repairs, express, camp fees, tools, photographs, telephone, small items)	795.71	9,396.20	
Reserve for publication of this report		* 223.64	
			$9,619.84

*Excess cost will be covered by sales.

ROSTER OF THE EXPEDITION AND STATISTICS

Those Who Served

Percy Hodges, Jr.	Boston, Mass.	Assistant in charge
Abbott Cheever	Andover, Mass.	Artist
Ralph Dorr	Millinocket, Maine	In charge of camp
James Gaul	Pittsburgh, Pa.	
Benjamin G. Jenkins	Danvers, Mass.	
Charles Currier	Amesbury, Mass.	
Warren Bailey	Lawrence, Mass.	
George Bull	Yonkers, N. Y.	
Elmer Woodworth	Groveland, Mass.	
Warren Lannan	Lawrence, Mass.	
Stephen W. Jenkins	Danvers, Mass.	
George P. Morrill, Jr.	Concord, N. H.	
Harold Haslam	Nashua, N. H.	
Corliss Lambert	Tyngsboro, Mass.	
Sturgis Hepburn	Concord, Mass.	
Frederick R. Haigh	Lawrence, Mass.	
Warren K. Moorehead	Andover, Mass.	Director

STATISTICS

Seven of the men were with the survey five months,—the entire period; maximum force fourteen men; average personnel, ten.

Distance covered by the party on foot about 1,000 miles. Canoe work,—800 to 900 miles.

Number of test pits,—over 13,000. Large pits,—about 200.

Sites examined,—both large and small,—about 420. Number of specimens secured,—over 2,000.

Estimated distance covered by automobile carrying digging crew,—10,000 miles.